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Quality Expectations and Willingness to Pay of German, Italian, and Turkish Strawberry Consumers

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Abstract

This study investigated consumer expectations and perceived quality of strawberries across different geographical contexts to identify the main drivers of purchasing behavior within a cross-country framework. An online survey was conducted among consumers in Italy, Germany, and Turkey to explore consumption habits, purchasing channels, sensory expectations, product perceptions, and willingness to pay (WTP) for specific product attributes. Results confirmed a high level of consumer appreciation for strawberries across all countries, primarily driven by their sensory characteristics. However, purchasing behavior and consumption patterns were strongly influenced by cultural and market-related factors. Visual attributes were confirmed to be key cues guiding product choice; however, label indications related to sensory traits and functional properties exerted a greater influence. Flavor, firmness, and overall taste balance represented critical determinants of consumer satisfaction. Differences across demographic groups were also observed, with younger and male consumers reporting lower levels of satisfaction with key sensory attributes, including juiciness, aroma, and freshness. Cross-country comparisons revealed heterogeneous WTP patterns, with Turkish consumers showing a greater propensity to pay premium prices for quality-related, local, organic, and environmentally friendly attributes compared with German and Italian consumers. Overall, the findings highlight the combined influence of sensory quality, cultural context, and sociodemographic characteristics in shaping strawberry perception and purchasing behavior. These insights may support breeders, producers, and retailers in developing targeted product strategies and market positioning across different geographical areas and consumer segments.

Keywords: strawberry; consumer experience; quality assessments; quality expectations; WTP

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1. Introduction

In recent years, the importance of small fruit cultivation has been increasing [1] due to several factors, including advances in genetics and production systems, the rapid development of the industry driven by increased production [2–4], innovations in post-harvest management that enhance shelf-life quality [5–7] and growing consumer awareness of the beneficial health effects associated with berry consumption [8,9]. Strawberries (Fragaria × ananassa, Duch.) are among the most widely consumed fruits in both fresh and processed forms, valued for their peculiar and appealing appearance, flavor, and taste, enhanced by nutritional and health-related properties. The strawberry edible part, actually an enlarged receptacle, is rich in micronutrients such as vitamin C and folate, as well as a wide variety of health-promoting bioactive compounds, including ellagic acid, β-carotene, lutein, zeaxanthin, niacin, and particularly phenolics [10,11].

The connection between dietary habits, human health, and bioactive compounds from fruits like strawberries has been a key focus of nutritional research. Several studies have highlighted the health-promoting properties of strawberries, emphasizing their antioxidant, anti-inflammatory, and disease-preventive potential due to their rich phytochemical composition [10,12–20]. Therefore, effective strategies aimed at improving strawberry quality to increase consumption may have a positive impact on consumer health [21].

The issue of integrating genetic advances, innovative agronomic and post-harvest technologies to increase consumer inclination for strawberries was highlighted by Roudelliac [22]. Current strawberry breeding must consider the creation of cultivars that meet consumer satisfaction and loyalty to purchase. The consumer-driven approach can be advantageous for orienting strawberry breeding and marketing strategies. Strawberries are generally well-received and enjoyed by consumers [23], and are also recognized for their health-enhancing properties [20]. Health claims promoting the benefits of strawberries can help increase consumption. Also, environmental and sustainability issues play a role in consumer choices [17,24]. However, a deeper understanding of consumer expectations and motivation should be pursued to build a more appealing and prosperous global strawberry market [25]. One of the main challenges is achieving the desired quality level as expected by consumers and measurable through consumer surveys [26–28].

To provide a comprehensive overview of perceived strawberry quality, the present study was conducted through an online questionnaire, in three countries representative of different geographic areas: Germany (Central and Northern Europe), Italy (Southern Europe), and Turkey (South-East Mediterranean), each with peculiar market and production characteristics. In Germany, strawberry cultivation dates to the early twentieth century and was originally oriented toward local markets. The sector has increasingly focused on sustainability, climate resilience, and the development of high-quality varieties tailored to domestic consumer preferences [29,30]. In Italy, strawberry production has experienced significant development since the 1960s. Initially concentrated in southern regions with open-field cultivation, the sector has progressively evolved toward high-yield greenhouse production systems [31] and the development of varieties aimed at both domestic and export markets [32], with a particular care for sustainability issues [33]. Differences among national markets are also reflected in consumption patterns. A study conducted across several European and Mediterranean countries found significant cross-country variation in strawberry purchasing behavior [17] related to the population income and the degree of urbanization in each country. In Turkey, strawberry production is favored by the climatic conditions of the Mediterranean, Aegean, and Marmara regions, where harvesting can take place from mid-March to early June [21]. Commercial strawberry production began in the 1970s and rapidly expanded across the main producing areas. More recently, breeding

programs have focused on developing resilient local varieties and cultivars suitable for export markets.

Despite the growing body of research on the nutritional properties and sensory characteristics of strawberries, relatively little attention—moreover confined to specific national contexts—has been devoted to examining how consumers form expectations about strawberry quality [34,35] and how these expectations relate to perceived product attributes and economic preferences. Within this context, the present research was conducted as part of the European BreedingValue project [36], which aims to support the development of fruit varieties that better meet consumer expectations and market needs. Cross-country studies can provide important data for planning strategies aimed at influencing consumer attitudes and purchasing behavior regarding fresh fruits [37]. This study explores consumers' perceptions of expected quality traits and evaluates how strawberry-specific attributes shape interest and affective responses across different countries, while also fostering willingness to pay (WTP) [38]. Overall, the study provides insights for future variety development strategies, cultivation protocols, and market-oriented product development.

2. Materials and Methods

Data from three countries were collected through an online survey. The questionnaire was originally developed in English and subsequently translated, to ease communication with local consumers, into German, Italian, and Turkish by native speakers with experience in food consumer research. Each translated version was reviewed by additional native speakers within the research team to ensure clarity, linguistic accuracy, and conceptual consistency across languages. Particular attention was given to the wording of questions related to sensory expectations and WTP to maintain the intended meaning across cultural contexts. Although a formal back-translation procedure was not performed, the iterative review process aimed to ensure that the translated versions conveyed equivalent concepts in the three languages. The surveys were submitted between July 7 and 18, 2022. All participants provided informed consent prior to participation, according to the indication of the Italian National Research Council Ethical Commission, which assessed the Ethical Clearance (notification 0056247/2021, 21 September 2021).

2.1. Design of Survey

An online questionnaire was developed to investigate how consumers evaluate strawberry quality and what they expect from strawberry fruits. The initial approach was designed to assess strawberry appreciation relative to other major fruit crops (Q1). Participants were asked to indicate which fruit types they liked and to what extent, on a 7-point scale (1 = very low, 7 = very high). The following questions aimed to profile purchase habits (Q2, Q3), preference drivers (Q4), assess satisfaction with the sensory and nutritional quality of strawberries currently available on the market (Q5), explore potential improvements that could enhance consumption (Q6), examine consumers' perceptions of strawberry attributes (Q7), examine consumers' WTP for specific characteristics (Q8), and assess effect of label claims on consumer choices through Conjoint Analysis (Q9). Table 1 shows all questions and rating criteria adopted in the online survey.

As for the conjoint analysis (Q9), the study employed a full-factorial design, presenting respondents with complete product profiles in a rating-based evaluation task that encompassed every possible combination of attribute levels. The experimental design included three factors: visual characteristics (intense color, large size), sensory qualities (juicy, sweet, aromatic, firm), and functional attributes (nutrient-dense, high in antioxidants). These factors generated a set of 16 cards ($2 \times 4 \times 2$), each depicting one level from each attribute category. The choice of factors and attributes was guided by an in-depth literature review [39].

Table 1. Questions and topics proposed in the online survey.

Topic	Question/Statements	Options
(Q1) Preferred fruit type	Please indicate your appreciation for each of the listed fruits. Rating: 1—I don't like it; 7—I like it a lot	Apricot Banana Blackberry Blueberry Cherry Grape Grapefruit Kiwi Orange Peach Pear Pineapple Plum Pomegranate Raspberry Strawberry Watermelon
(Q2) Purchase frequency	How often do you buy strawberries during the selling season?	1–3 times per month once per week 2–4 times per week Every day I buy in bulk and store them in the freezer
(Q3) Purchase channel	Indicate your usual purchase channels, one or more options	Self-harvesting Local market or outdoor market sales Small store Supermarket E-commerce Berries directly imported from other countries
(Q4) Preference drivers: appearance	Select the visual traits that drive your choice of strawberries. One or more options are allowed	Brick red color Intense color Dark red color White color Color evenness Large fruit size Small fruit size Uniform fruit size Bright color Low seed (achenes) presence
(Q5) Consumer satisfaction	How satisfied are you with the following sensory traits of strawberries currently available on the market? Rating: 1—not satisfied at all; 7—extremely satisfied	Balanced taste Overall flavor Freshness Juiciness Strawberry aroma Acidity Sweetness Astringency Overall quality

Table 1. *Cont.*

Topic	Question/Statements	Options
(Q6) Improvements fostering purchase	Which of the following characteristics would be necessary for increasing strawberry purchases? One or more options are allowed	Price Shelf-life Fruit size Packaging Appearance Taste Health properties Label information Fruit consistency Provenance/authenticity Flavor Availability Range of choice Lack of defects (ex., bruise, mould) New cultivars Organic production
(Q7) Strawberry-related qualities and feelings	How much do you agree with the following sentences about strawberry consumption? Rating: 1 strongly Disagree–7 strongly agree	It is a source of antioxidants Reduces the risk of cancer Reduces the risk of cardiovascular disease May generate an allergic reaction Makes me happy May cause stomach acidity Helps me to keep fit Makes me feel healthier Too expensive to consume every day It is fast to prepare It is a natural product Reminds me of childhood I like consuming it off-season (imported) I like to use it as a dessert ingredient Suitable for children It is an environmentally friendly product It is a local product I like to consume it with friends I like to consume it with family I like to consume it at breakfast I like to preserve it (frozen, marmalade. . .)
(Q8) WTP	How much more are you willing to pay for the following proposal as compared to a basic strawberry fruit? Possibilities (0%; +10%; +11% to 25%; +26% to 50%; +51% to 100%; more than 100%)	Premium product Organic product Ancient cultivar Environmentally friendly product New cultivar

In line with a holistic assessment approach, each card illustrated a strawberry package through a pictorial representation accompanied by the relevant attribute descriptors (Figure 1). The cards were presented using a monadic, sequential procedure, with order and carryover effects systematically balanced. Participants evaluated the perceived attractiveness of each product profile on a seven-point Likert scale (1 = very poor; 7 = excellent).

Figure 1. Conjoint Analysis cards submitted to survey participants' evaluation based on label claims. Cards were proposed in a randomized order.

2.2. Data Collections and Profile of Participants

Data collection took place in Germany, Italy, and Turkey via the Lime Survey platform. Participants were recruited through targeted advertisements disseminated via social media platforms and completed the questionnaire on a voluntary basis. Preliminary screening ensured compliance with the inclusion criterion, whereby only individuals aged 18 years or older were eligible to participate.

A total of 869 consumers (283 living in Germany, 291 in Italy, and 295 in Turkey), comprising 59% females and 61% males, aged 18–60 years (with an average age of 39 years), completed the questionnaire. Table 2 provides a detailed overview of the participants' sociodemographic characteristics: gender, age, area of residence (urban, suburban, rural), household data (monthly income, monthly expenses for food, household size). The samples were not intended to be fully representative of the national population; indeed, participants were recruited to obtain heterogeneous groups of strawberry consumers rather than statistically representative demographic distributions [40]. Gender distribution was relatively balanced across the three countries (58–61% female), and a wide range of age groups was represented, ensuring variability in consumer perspectives.

Table 2. Sociodemographic data.

Data	Countries		
	Germany	**Italy**	**Turkey**
Participants	283	291	295
Gender			
Female	61%	60%	58%
Male	39%	40%	42%
Age group			
18–30	27%	21%	36%
31–45	35%	33%	38%
46–60	38%	46%	26%

Table 2. *Cont.*

Data	Countries		
	Germany	**Italy**	**Turkey**
Area of residence			
Urban	28%	51%	3%
Suburban	32%	28%	1%
Rural	40%	21%	96%
Household data Monthly income (EUR)	3825 (379.0)	2199 (76.3)	2388 (123.0)
Monthly food expense (EUR)	483 (34.4)	513 (18.1)	700 (31.4)
Food expenses per person (EUR)	195 (0.09)	172 (0.07)	184 (0.08)
Income spent on food (%)	12.6	23.3	23.3
Household size	2.5	3.0	3.8

Overview of the participants' sociodemographic characteristics (gender, age, area of residence (urban, suburban, rural), average monthly income (in euros), average monthly expenses for food, average expenses per person, percentage of income spent on food, and average number of family members). Standard error for household data in brackets.

2.3. Data Analysis

Data were analyzed using the R programming language 4.3.1 (R Core Team 2023. _R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria). One-way ANOVA analysis was performed on the consumer scores, and the Tukey post hoc test was conducted to assess the differences among the samples.

ANOVA was applied by considering the Likert-scale responses as interval-level data, assuming equal spacing between response categories. In addition, the key assumptions required for ANOVA—namely independence of observations, normal distribution of residuals, and homogeneity of variances—were satisfied. Under these conditions, ANOVA is considered an appropriate method for analyzing Likert-scale data and may be preferred over non-parametric alternatives such as the Kruskal–Wallis test [41].

The chi-square test of independence was used to determine the associations between variables in contingency tables. For the conjoint analysis, part-worth utilities were estimated using Ordinary Least Squares regression analysis. This is the most extensively used method, allowing for the establishment of the relative importance of the attributes and the part-worths of each of their levels. One-way ANOVA analysis was then performed on the relative importance, on factors, on part-worth utilities, and on levels. One-way ANOVA was performed separately for each group of respondents (Turkish, Italians, and Germans).

WTP was measured using categorical premium ranges relative to a basic strawberry product but belonging to different categories: premium, high-quality, organic, old cultivar strawberries, and low environmental impact.

WTP was categorized into six levels based on price increases [42]: 0%, 10% more, +11/25%, +26/50%, +51/100%, and +100%. A hierarchical log-linear analysis was conducted to examine whether the association between attributes (local product, guaranteed high quality, organic product, old cultivars, product with low environmental impact, new Cultivars) and Level (0, 1, 2, 3, 4, 5) differed across the three consumer groups (Germany, Italy, Turkey). A fully interactive model, including the Attributes x Level x Group three-way interaction, was used.

3. Results

The countries differ in terms of age class and area of residence (Table 2). The majority of respondents from Turkey (38%) were between the ages of 18 and 45 and lived in rural areas (96%), while the majority of respondents from Italy (46%) were between the ages of 46 and 60 and lived in urban areas (51%). The majority of German respondents were between the ages of 31 and 60 and were more equally distributed between urban, suburban, and rural. Household data indicate that German respondents have a monthly income significantly higher than those in Italy (+43%) and Turkey (+38%). However, when calculating food expenditure per individual, accounting for differences in food expenses and household size, Germany still ranks first, but the gap decreases to +12% compared to Italy and +6% compared to Turkey, indicating greater homogeneity for this variable.

Strawberries received the highest approval ratings in all three countries and were by far the most popular fruit among them (Table 3). In Germany, no other fruit type reached strawberry appreciation, while in Italy, the fruit recorded an appreciation comparable to that of the cherry. In Turkey, the leading position of strawberry in consumer preference was less evident, as several fruits, including watermelon, banana, cherry, pomegranate, blackberry, peach, and grape, showed comparable levels of appreciation.

Table 3. Preferred fruit types by country.

Fruit Types	Germany	Italy	Turkey
Apple	5.50 bc	5.19 fgh	5.62 fgh
Apricot	4.84 de	5.79 cde	5.88 cdefg
Banana	5.48 bc	5.45 efg	6.32 ab
Blackberry	4.88 de	5.68 cde	6.02 abcde
Blueberry	5.23 bcd	5.81 bcde	5.29 h
Cherry	5.54 bc	6.25 ab	6.32 ab
Grape	5.47 bc	5.60 def	6.16 abcd
Grapefruit	4.20 f	3.98 i	5.81 defg
Kiwifruit	5.05 cd	5.03 gh	5.58 fgh
Orange	5.21 cd	5.55 def	5.93 bcdef
Peach	5.46 bc	6.11 abc	6.14 abcd
Pear	4.90 de	4.90 h	5.74 efg
Pineapple	5.11 cd	5.62 def	5.51 gh
Plum	4.84 de	4.92 h	5.83 defg
Pomegranate	4.41 ef	4.77 h	6.13 abcde
Raspberry	5.48 bc	5.76 cde	5.89 cdefg
Strawberry	6.31 a	6.43 a	6.35 a
Watermelon	5.72 b	5.92 bcd	6.23 abc

Fruit appreciation rating in Germany, Italy, and Turkey. Scale 1 (I don't like at all), 7 (I like extremely). Different letters correspond to significantly different means according to ANOVA analysis followed by the Tukey post hoc test ($p < 0.05$).

Tables 4–8 are related to the questions Q2 to Q6 and give a general overview of the main factors influencing the consumers' purchase behaviors.

Table 4. Frequency of strawberry purchase options and percentage (in brackets), divided by country, gender, and age class.

	Country			Gender		Age Class		
	Germany	**Italy**	**Turkey**	**Female**	**Male**	**18–30**	**31–45**	**45–60**
Frequency (%)	N = 283	N = 291	N = 295	N = 516	N = 353	N = 245	N = 305	N = 319
1–3 times per month	85 (30) +	50 (17) −	63 (21)	112 (22)	86 (24)	62 (25)	61 (20)	75 (24)
Once per week	100 (35)	118 (41)	112 (38)	188 (36)	142 (40)	80 (33)	121 (40)	129 (40)
2–4 times per week	66 (23)	86 (30)	87 (29)	151 (29)	88 (25)	71 (29)	89 (29)	79 (25)

Table 4. *Cont.*

	Country			Gender		Age Class		
	Germany	**Italy**	**Turkey**	**Female**	**Male**	**18–30**	**31–45**	**45–60**
Everyday	18 (6)	35 (12) +	19 (6)	45 (9)	27 (8)	22 (9)	27 (9)	23 (7)
I buy in bulk and store it in the freezer	14 (5)	2 (1) −	14 (5)	20 (4)	10 (3)	10 (4)	7 (2)	13 (4)
	X-squared = 31.599 df = 8 *p*-value =< 0.001			X-squared = 3.8267 df = 4 *p*-value = 0.430		X-squared = 8.2688 df = 8 *p*-value = 0.408		

The symbols + and − indicate, respectively, positive and negative deviations from the expected frequencies. The number of symbols is proportional to the standardized residuals from the fitted model. +/− indicate significant deviations from the expected cell frequencies at $\alpha = 0.05$. Chi-square test is reported for country, gender and age-class in the last rows of each category.

Table 5. Frequency of purchase channels and percentage (in brackets), divided by country, gender, and age class.

	Country			Gender		Age Class		
	Germany	**Italy**	**Turkey**	**Female**	**Male**	**18–30**	**31–45**	**45–60**
Frequency (%)	N = 283	N = 291	N = 295	N = 516	N = 353	N = 245	N = 305	N = 319
Local market/outdoor market sales	157 (55)	198 (68)	276 (94)	379 (73)	252 (71)	178 (73)	242 (79)	211 (66)
Self-harvesting	43 (15)	36 (12)	53 (18)	87 (17)	45 (13)	42 (17)	50 (16)	40 (13)
Small store	27 (10) − −	104 (36) +	115 (39)	129 (25)	117 (33) +	86 (35)	86 (28)	74 (23)
Supermarket	220 (78) +	231 (79)	182 (62) − −	390 (76)	243 (69)	165 (67)	221 (72)	247 (77) +
E-commerce	13 (5)	4 (1) −	35 (12) +	39 (8)	13 (4)	20 (8)	22 (7)	10 (3)
Strawberries directly imported from other Countries	19 (7)	6 (2) −	25 (8)	37 (7)	13 (4)	17 (7)	21 (7)	12 (4)
	X-squared = 105.07 df = 10 *p*-value < 2.2×10^{-16}			X-squared = 17.039 df = 5 *p*-value = 0.004		X-squared = 20.649 df = 10 *p*-value = 0.024		

The symbols + and − indicate, respectively, positive and negative deviations from the expected frequencies. The number of symbols is proportional to the standardized residuals from the fitted model. Single +/− or double − indicate significant deviations from the expected cell frequencies at $\alpha = 0.05$ and $\alpha = 0.001$, respectively. Chi-square test is reported for country, gender, and age class in the last rows of each category.

Table 6. Frequency of visual traits orienting purchase choice and percentage (in brackets), divided by country, gender, and age class.

	Country			Gender		Age Class		
	Germany	**Italy**	**Turkey**	**Female**	**Male**	**18–30**	**31–45**	**45–60**
Frequency (%)	N = 283	N = 291	N = 295	N = 516	N = 353	N = 245	N = 305	N = 319
Orange color	14 (5)	10 (3)	10 (3)	21 (4)	13 (4)	14 (6)	11 (4)	9 (3)
Brick red color	63 (22) +	43 (15)	32 (11) −	88 (17)	50 (14)	45 (18)	44 (14)	49 (15)
Color intensity	102 (36)	144 (49)	151 (51)	240 (47)	157 (44)	102 (42)	146 (48)	149 (47)
Dark red color	103 (36)	94 (32)	127 (43)	197 (38)	127 (36)	92 (38)	111 (36)	121 (38)
White color	17 (6)	9 (3)	11 (4)	18 (3)	19 (5)	16 (7)	16 (5)	5 (2) −
Color evenness	82 (29)	110 (38)	112 (38)	181 (35)	123 (35)	82 (33)	103 (34)	119 (37)
Big dimension of fruit	83 (29) +	45 (15) −	84 (28)	123 (24)	89 (25)	75 (31)	68 (22)	69 (22)
Small dimensions of fruit	37 (13)	43 (15)	49 (17)	73 (14)	56 (16)	28 (11)	45 (15)	56 (18)
Uniform dimension of fruit	47 (17)	73 (25) +	48 (16)	91 (18)	77 (22)	43 (18)	46 (15)	79 (25) +
Bright color	14 (5) − −	99 (34) +	108 (37) +	134 (26)	87 (25)	71 (29)	81 (27)	69 (22)
Few achenes	14 (5)	8 (3)	19 (6)	24 (5)	17 (5)	11 (4)	20 (7)	10 (3)
	X-squared = 120.29 df = 20 *p*-value = 2.515×10^{-16}			X-squared = 6.039 df = 10 *p*-value = 0.812		X-squared = 39.149 df = 20 *p*-value = 0.006		

The symbols + and − indicate, respectively, positive and negative deviations from the expected frequencies. The number of symbols is proportional to standardized residuals from the fitted model. Single +/− or double − indicate significant deviations from the expected cell frequencies at $\alpha = 0.05$ and $\alpha = 0.001$, respectively. Chi-square test is reported for country, gender, and age-class in the last rows of each category.

Table 7. Variance analysis on consumer satisfaction with strawberry quality attributes by country, gender, and age group.

	Country			Gender		Age		
Attributes	**Germany**	**Italy**	**Turkey**	**Female**	**Male**	**18–30**	**31–45**	**45–60**
Total flavor	5.40 a	5.38 a	5.25 a	5.36 a	5.32 a	5.23 a	5.43 a	5.35 a
Juiciness	5.40 a	5.41 a	5.38 a	5.48 a	5.27 b	5.20 b	5.43 ab	5.53 a
Balanced taste	5.28 a	5.19 a	5.16 a	5.25 a	5.15 a	5.09 a	5.29 a	5.22 a
Typical aroma	5.26 a	5.31 a	5.27 a	5.30 a	5.26 a	5.00 b	5.36 a	5.42 a
Overall quality	5.26 a	5.36 a	5.37 a	5.34 a	5.30 a	5.11 b	5.34 ab	5.48 a
Firmness	5.25 a	5.29 a	4.86 b	5.21 a	5.01 b	4.86 b	5.26 a	5.22 a
Sweetness	5.24 a	5.27 a	5.41 a	5.36 a	5.23 a	5.20 a	5.35 a	5.35 a
Freshness	5.22 a	5.47 a	5.48 a	5.43 a	533 a	5.20 b	5.40 ab	5.53 a
Acidity	5.12 a	4.85 a	4.51 b	4.91 a	4.69 b	4.50 b	4.94 a	4.95 a
Astringency	4.84 a	4.76 a	435 b	4.64 a	4.66 a	4.52 a	4.74 a	4.65 a

Factors	**Mean SQ**	**F value**	***p* value**
Attribute	56.53	28.967	$<2.00 \times 10^{-16}$ ***
Country	10.64	5.452	0.004 **
Gender	22.2	11.375	0.000 **
Age class	60.25	30.871	4.37×10^{-14} ***

Statistical significance for the main factors reported in the lower part of the table. Likert scale: 1–7 (1: not satisfactory at all; 4: average satisfaction; 7: extremely satisfactory). Different letters (a, b) correspond to significantly different means according to the Tukey post hoc test ** $p < 0.01$; *** $p < 0.001$.

Table 8. Frequency of consumers suggesting improvements for strawberries on the market and percentage (in brackets), divided by country, gender, and age class.

	Country			Gender		Age Class		
	Germany	**Italy**	**Turkey**	**Female**	**Male**	**18–30**	**31–45**	**45–60**
Frequency (%)	N = 283	N = 291	N = 295	N = 516	N = 353	N = 245	N = 305	N = 319
Price	146 (52) +	137 (47)	179 (61) −	267 (52)	195 (55)	133 (54)	165 (54)	164 (51)
Shelf-life	61 (22)	59 (20)	112 (38)	146 (28)	86 (24)	60 (24)	90 (30)	82 (26)
Fruit size	54 (19) +	16 (5) −	74 (25)	84 (16)	60 (17)	50 (20)	53 (17)	41 (13)
Packaging	38 (13)	29 (10)	74 (25)	81 (16)	60 (17)	43 (18)	51 (17)	47 (15)
Appearance	51 (18)	15 (5) − −	104 (35) +	91 (18)	79 (22)	54 (22)	65 (21)	51 (16)
Taste	108 (38)	134 (46)	170 (58)	232 (45)	180 (51)	109 (44)	149 (49)	154 (48)
Health properties	28 (10) −	53 (18)	101 (34)	109 (21)	73 (21)	52 (21)	69 (23)	61 (19)
Label information	29 (10)	53 (18) +	55 (19)	87 (17)	50 (14)	34 (14)	50 (16)	53 (17)
Fruit consistency	8 (3) −	19 (7)	60 (20) +	55 (11)	32 (9)	33 (13)	28 (9)	26 (8)
Provenance/authenticity	72 (25)	109 (37) ++	46 (16) − −	132 (26)	95 (27)	58 (24)	80 (26)	89 (28)
Flavor	65 (23)	60 (21) −	187 (63) +	175 (34)	137 (39)	89 (36)	111 (36)	112 (35)
Availability	66 (23) ++	37 (13)	44 (15) −	84 (16)	63 (18)	40 (16)	53 (17)	54 (17)
Range of choice	18 (6)	15 (5)	25 (8)	37 (7)	21 (6)	16 (7)	23 (8)	19 (6)
Lack of defects	58 (20)	89 (31) +	91 (31)	150 (29)	88 (25)	72 (29)	75 (25)	91 (29)
New cultivars	27 (10)	20 (7)	43 (15)	52 (10)	38 (11)	27 (11)	39 (13)	24 (8)
Organic production	52 (18) −	102 (35)	180 (61) +	193 (37)	141 (40)	78 (32)	136 (45)	120 (38)
	X-squared = 270.2 df = 30 p-value = $< 2.2 \times 10^{-16}$			X-squared = 10.573 df = 15 p-value = 0.782		X-squared = 26.331149 df = 30 p-value = 0.658		

The symbols + and − indicate, respectively, positive and negative deviations from the expected frequencies. The number of symbols is proportional to standardized residuals from the fitted model. Single or double +/− indicate significant deviations from the expected cell frequencies at $\alpha = 0.05$ and $\alpha = 0.001$, respectively. Chi-square test is reported for country, gender, and age-class in the last rows of each category.

The frequency of strawberry purchase (Q2) differed significantly across countries ($\chi^2 = 31.60$, df = 8, $p = 0.0001$), whereas no significant differences were observed according to gender ($\chi^2 = 3.83$, df = 4, $p = 0.43$) or age class ($\chi^2 = 8.27$, df = 8, $p = 0.41$).

Considering country differences, German consumers reported purchasing strawberries less frequently than expected on a weekly basis (17%) and more frequently than expected at a lower frequency (1–3 times per month; 30%), as indicated by the positive standardized residuals for this category. In contrast, Italian consumers showed a higher-than-expected proportion of daily strawberry purchases (12%), while purchasing 1–3 times per month occurred less frequently than expected (17%). Turkish consumers displayed a more balanced distribution across categories, with a slightly higher proportion of purchases occurring once or twice per week (38% and 29%, respectively).

Across the whole sample, the most common purchasing frequency was once per week (36–41% depending on the subgroup), followed by 2–4 times per week (23–30%). Daily purchase was relatively uncommon (6–12%), and buying strawberries in bulk for storage in the freezer represented a marginal behavior across all groups (1–5%).

The distribution of strawberry purchasing preferences by country, gender, and age group (Table 5—Q3) revealed that open markets (n = 276) are predominant in Turkey; supermarkets, which are modern retail chains, are more preferred in countries such as Germany (n = 220) and Italy (n = 231). While supermarkets rank first for both genders, women tend to prefer local markets (379) over supermarkets (252). Additionally, women show interest in alternative sales channels such as self-harvesting, small stores, and e-commerce. However, the 31–45 age group prefers local markets more than other age groups. The 18–30 and 31–45 age groups prefer alternative channels, such as e-commerce and small stores, more than the 45–69 age group. The direct import of strawberries from other countries resulted in negligible and non-significant impacts.

The frequency of visual characteristics considered important by consumers when selecting strawberries (Table 6—Q4) differed significantly among countries; in particular, brick red color and big dimension of fruit were selected more frequently than expected in Germany, whereas bright color was selected more frequently than expected in both Italy and Turkey. In addition, the uniform dimension of fruit showed a higher-than-expected frequency in Italy. Age class had a slight influence on visual preferences, mainly related to the uniform dimension of fruit, which was selected more frequently than expected in the 45–60 age group.

The analysis of the sensory attributes influencing consumers' satisfaction with market-available strawberries (Table 7—Q5) indicated that age, country of residence, and gender exerted a statistically significant effect on overall satisfaction. Total flavor, juiciness, balanced taste, typical aroma, overall quality, sweetness, and freshness received high scores in all countries. Firmness, acidity, and astringency received lower scores in Turkey than in Germany and Italy. Women rated juiciness, firmness, and acidity slightly higher than men. Among age groups, the 45–60 age group showed the highest satisfaction for all the attributes considered. Younger consumers were less satisfied with the typical aroma, overall quality, firmness, freshness, and acidity.

The improvements suggested by consumers highlight the critical factors influencing the purchase of strawberries on the market (Table 8—Q6). The most cited critical factors across the three nations were price (462), taste (412), and organic production (334). The taste was improved for all the countries, while the price got higher citations than expected (146) in German consumers, and the organic production received higher citations than expected (180) in Turkish respondents. Other factors of improvement were: the fruit size, which got higher citations in consumers from Germany (54) together with the availability (66); the label information (53), provenance/authenticity (109), lack of defect (89) which were cited the most by Italian respondents; and appearance (104), fruit consistency (60) and flavor (187), which registered frequencies higher than expected in consumers from Turkey.

Significant differences between countries were highlighted in terms of perceptions and feelings about strawberries (Table 9—Q7). Turkish consumers were more in agreement with most of the statements regarding health and healthy properties, as well as happy feelings and the use of strawberries in different contexts (sweet ingredient, preserved, for children, family, and friends). Italian consumers were much in agreement with a few statements regarding health ("source of antioxidants" and "may cause allergic reactions"), while the German consumers agreed only on statements regarding the consumption habits ("I like it off season" and "I like to consume it at breakfast"). According to gender differences related to strawberry perception, women were more sensitive to most of the statements regarding health, healthy properties, positive feelings, the use in different contexts, and the consumption habits. Significant difference were also recorded in the age groups where the 31–45 age group were more in agreement with few statements mainly regarding positive feelings ("makes me happy"), health ("may cause acidity to the stomach") the consumption habits ("quick to prepare", "I like to consume a sweet ingredient", "I like to preserve it") and the use in different context ("It's a local product", "I like to consume it with friends", " I like to consume it at breakfast").

Table 9. Variance analysis on strawberry-related qualities, feelings, and consumption motivations by country, gender, and age group.

	Countries			Gender		Age Group		
Attributes	**Germany**	**Italy**	**Turkey**	**Female**	**Male**	**18–30**	**31–45**	**45–60**
It is a source of vitamins	5.60 b	5.78 ab	6.00 a	5.92 a	5.61 b	5.68	5.86	5.82
It is a source of antioxidants	4.90 b	5.41 a	5.50 a	5.37 a	5.14 b	5.12	5.31	5.36
Reduces the risk of cancer	4.51 b	4.60 b	5.28 a	4.83	4.76	4.77	4.87	4.76
Reduces the risk of cardiovascular diseases	4.82 b	4.93 b	5.33 a	5.08	4.96	5.01	5.16	4.92
May generate an allergic reaction	4.60 ab	4.90 a	4.36 b	4.81 a	4.34 b	4.46	4.70	4.92
Makes me happy	5.50 b	5.39 b	6.06 a	5.79 a	5.45 b	5.63 ab	5.81 a	5.52 b
May cause acidity in the stomach	4.10 b	3.75 c	4.48 a	4.04	4.20	4.34 a	4.21 a	3.84 b
Helps me to keep fit	5.06 b	4.96 b	5.40 a	5.26 a	4.97 b	5.06	5.19	5.16
Makes me feel healthier	5.23 b	5.21 b	5.77 a	5.52 a	5.23 b	5.40	5.54	5.27
Too expensive to consume every day	5.10 b	4.73 c	5.52 a	5.16	5.05	5.12	5.23	5.00
Quick to prepare	5.87	5.82	5.81	5.93 a	5.69 b	5.59 b	5.90 a	5.96 a
It is a natural product	5.70	5.68	5.86	5.76	5.73	5.57	5.81	5.82
Reminds me of childhood	5.70	5.68	5.86	5.76	5.73	5.57	5.81	5.82
I like it off-season (imported)	4.61 a	3.32 c	3.80 b	3.87	3.95	3.87	4.09	3.76
I like to use a sweet ingredient	5.39 b	5.12 b	5.90 a	5.66 a	5.19 b	5.49 ab	5.63 a	5.30 b
Suitable for children	5.75 b	5.65 b	6.18 a	5.95 a	5.75 b	5.80	5.95	5.83
It is an environmentally friendly product	5.30 b	4.98 c	5.89 a	5.43	5.34	5.33	5.44	5.40
It is a local product	5.51 b	5.13 c	5.80 a	5.53	5.41	5.20 b	5.58 a	5.59 a
I like to consume it with friends	5.08 b	5.00 b	5.75 a	5.46 a	5.03 b	5.36 ab	5.42 a	5.09 b
I like to consume it with family	5.58 b	5.81 b	6.12 a	5.98 a	5.64 b	5.69	5.94	5.87
I like to consume it at breakfast	4.78 a	4.15 b	4.45 ab	4.63 a	4.20 b	4.51 ab	4.72 a	4.16 b
I like to preserve it (frozen, marmalade…)	4.54 b	3.66 c	5.16 a	4.61 a	4.22 b	4.69 a	4.63 a	4.11 b

Factors	**Mean SQ**	**F value**	***p* value**
Attribute	287.1	114.2	$<2 \times 10^{-16}$ ***
Country	413	164.26	$<2 \times 10^{-16}$ ***
Gender	270.4	107.56	$<2 \times 10^{-16}$ ***
Age class	64.5	25.66	7.44×10^{-12} ***

Statistical significance for the main factors reported in the lower part of the table. Likert scale: 1–7 (1= I don't agree; 7 = I fully agree). Different letters (a, b, c) correspond to significantly different means according to the Tukey post hoc test *** $p < 0.001$.

The questionnaire explored consumers' willingness to pay (WTP) for a generic strawberry product presented on the market, highlighting attributes related to origin, quality, production methods, and the type of strawberry variety (traditional or innovative) (Table 10—Q8), which were evaluated as WTP drivers (Table 10). WTP was categorized into six price levels, enabling a comparative analysis of consumers' willingness to pay across product categories in Germany, Italy, and Turkey. The results are interpreted as

descriptive indications of stated willingness to pay rather than as econometrically estimated monetary values.

Table 10. WTP for different strawberry attributes by countries.

		Countries			
Attributes		**Germany**	**Italy**	**Turkey**	**Total**
Local product	0	68 (24)	68 (23)	20 (7)	156 (18)
	1	78 (28)	105 (36)	48 (16)	231 (27)
	2	49 (17)	63 (22)	49 (17)	161 (19)
	3	36 (13)	28 (10)	69 (23)	133 (15)
	4	39 (14)	16 (5)	57 (19)	112 (13)
	5	13 (5)	11 (4)	52 (18)	76 (9)
Total		283	291	295	869
Guaranteed high quality	0	75 (27)	59 (20)	6 (2)	140 (16)
	1	77 (27)	114 (39)	46 (16)	237 (28)
	2	50 (18)	58 (20)	52 (18)	160 (18)
	3	36 (13)	35 (12)	66 (22)	137 (16)
	4	35 (12)	18 (6)	69 (23)	122 (14)
	5	10 (4)	7 (2)	56 (19)	73 (8)
Total		283	291	295	869
Organic product	0	84 (30)	55 (19)	9 (3)	148 (17)
	1	75 (27)	118 (41)	35 (12)	228 (26)
	2	46 (16)	61 (21)	53 (18)	160 (18)
	3	35 (12)	33 (11)	73 (25)	141 (16)
	4	26 (9)	17 (6)	67 (23)	110 (13)
	5	17 (6)	7 (2)	58 (20)	82 (9)
Total		283	291	295	869
Products with low environmental impact	0	72 (25)	69 (24)	14 (5)	155 (18)
	1	85 (30)	125 (43)	59 (20)	269 (31)
	2	42 (15)	47 (16)	49 (17)	138 (16)
	3	35 (12)	21 (7)	49 (17)	105 (12)
	4	38 (13)	21 (7)	74 (25)	133 (15)
	5	11 (4)	8 (3)	50 (17)	69 (8)
Total		283	291	295	869
New cultivars	0	94 (33)	125 (43)	29 (10)	248 (29)
	1	78 (28)	96 (33)	58 (20)	232 (27)
	2	38 (13)	27 (9)	65 (22)	130 (15)
	3	36 (13)	25 (9)	61 (21)	122 (14)
	4	23 (8)	13 (4)	45 (15)	81 (9)
	5	14 (5)	5 (2)	37 (13)	56 (6)
Total		283	291	295	869
Old cultivars	0	116 (41)	103 (35)	47 (16)	266 (31)
	1	58 (20)	97 (33)	59 (20)	214 (25)
	2	32 (11)	43 (15)	63 (21)	138 (16)
	3	32 (11)	24 (8)	56 (19)	112 (13)
	4	30 (11)	20 (7)	45 (15)	95 (11)
	5	15 (5)	4 (1)	25 (8)	44 (5)
Total		283	291	295	869

Number and (percentage) of people indicating WTP for the given attribute: 0 = 0% more, 1 = 10% more, 2= 11% to 25% more, 3 = 26% to 50% more, 4 = 51% to 100% more, 5 = 100% more.

The significant three-way interaction ($p < 0.001$) demonstrates that the relationship between attributes and level is not consistent across the three countries. Instead, the pattern of frequencies across the six response levels varies markedly depending on the country

considered. Thus, the way participants distribute their responses across levels for each attribute differs significantly between Germany, Italy, and Turkey.

Responses regarding WTP for local products indicated relatively low interest in Germany and Italy, with about one quarter of consumers unwilling to pay a price premium. Among those willing to pay more, a 10% premium represented the largest share, accounting for over one third of respondents in Italy and a smaller proportion in Germany. In Turkey, few consumers refused to pay extra, and a higher proportion were willing to pay 26–50% or even 51–100% more.

For "guaranteed high quality," roughly one quarter of German consumers and one fifth of Italian consumers were unwilling to pay a premium, whereas this group was almost negligible in Turkey. While 10% additional payment was common in Germany and Italy, Turkish consumers exhibited the highest willingness to pay larger premiums, particularly in the 26–50% range.

WTP for organic products varied markedly across countries. About 30% of German consumers were unwilling to pay a premium; the percentages decrease in Italy, and become negligible in Turkey, where 97% of consumers were willing to pay extra for organic strawberries, with half accepting a 26–100% increase, and one fifth willing to pay more than double the base price.

For products with low environmental impact, about one quarter of German and Italian consumers refused to pay extra, whereas this share was smaller in Turkey. While a 10% premium predominated in Germany and Italy, roughly three-quarters of Turkish respondents declared WTP between 26% and over 100% more.

WTP for new cultivars showed moderate interest in Germany and Italy, mostly at a 10% premium, whereas in Turkey, higher premiums of 11–25%, 26–50%, and above were more common. Results for old cultivars were similar: WTP was concentrated around 10% in Germany and Italy, while Turkish consumers were willing to pay substantially higher premiums.

Conjoint analysis revealed the label influence on consumers' purchasing choices (Table 11—Q9). The results indicated that "sensory traits" was the attribute with the highest relative importance in driving choice, at 53%, followed by "functional properties" at 26% and "visual features" at 21% (Table 11). For sensory factors, the most critical positive levels were firmness (+0.084) and sweetness (+0.020); aroma was of less importance, while juiciness was the least appreciated attribute (−0.120). Firmness was a positive driver for all countries; in contrast, sweetness was positive in Germany (+0.062) and Turkey (+0.054), while in Italy, it was negative (−0.052).

Table 11. Ordinary Least Squares regression analysis on the relative importance given by consumers to selected strawberry quality attributes and their levels in Germany, Italy, and Turkey.

Factors	Relative Importance (%)	Level	Total	Germany	Italy	Turkey
Sensory traits	53.1 a	Firmness	0.084 a	0.072	0.077	0.104
		Sweetness	0.020 ab	0.062 a	−0.052 b	0.054 a
		Aromaticity	0.016 b	−0.024 a	0.037 a	0.034 a
		Juiciness	−0.120 c	−0.110 ab	−0.061 a	−0.191 b
Functional properties	25.9 b	Rich in antioxidants	0.047 a	−0.057 b	0.123 a	0.070 a
		Highly nutritious	−0.047 b	0.057 b	−0.123 a	−0.070 a
Visual features	21.0 c	Large size	0.017 a	−0.046 b	0.063 a	0.032 a
		Intense color	−0.017 b	0.046 a	−0.063 b	−0.032 b

Different letters (a, b, c) correspond to different means according to ANOVA analysis performed on part-worth utilities (total respondents, German respondents, Italian respondents, Turkish respondents).

Juicy was evaluated as a negative driver, especially in Turkey and Germany. In terms of functional properties, consumers preferred the presence of antioxidants over nutritional

claims. For visual traits, large size prevailed over intense color. However, in Italy and Turkey, antioxidants (+0.123; +0.070) and fruit size (+0.063; +0.032) were positively valued, whereas in Germany, these attributes had negative values. German consumers preferred general nutritional value (+0.057) and intense color (+0.046), which were less appreciated in Italy and Turkey.

4. Discussion

This study aimed to explore consumer expectations and perceived quality of strawberries in different geographical areas, in order to assess the main drivers of consumer purchase behavior in a cross-country framework. The findings indicated a consistently high level of consumer appreciation for strawberries compared with other fruit categories across different countries, underscoring the relevance and prominence of this fruit, well appreciated for its sensory characteristics [43]. Consumer purchasing behavior in relation to strawberries was studied from different perspectives.

4.1. Strawberry Consumption Patterns

Strawberry consumption patterns appeared primarily shaped by country-related factors, which may influence consumption habits due to cultural and market differences. Indeed, fruit consumption patterns in Europe show a clear south–north gradient, with higher fruit intake reported in Mediterranean countries compared with Northern European regions [9,44]. Moreover, the fruit consumption composition differs across Europe, with Northern and Central European countries showing a more diversified distribution among commonly available fruits such as apples, bananas, and citrus. This broader distribution of fruit types across the year may reduce the relative frequency of purchases of strongly seasonal fruits, such as strawberries, outside their peak season [45]. The pattern observed in Turkey may reflect an intermediate consumption behavior, characterized by regular but not intensive purchasing and related to cultural habits [46].

The cultural context also influences the preferred strawberry purchasing channels, which are in turn affected by generational and gender factors. Indeed, open markets were predominant in Turkey, whereas supermarkets were the main purchasing location in Germany and Italy, likely reflecting differences in national retail structures and food distribution systems [4]. The gender and age influences on purchase channels are consistent with previous studies showing that alternative outlets, such as farmers' markets and direct-to-consumer channels, attract specific consumer segments. In particular, it was demonstrated that women are more likely to use local and alternative food purchasing channels [47] and that participation in short food supply chains is often associated with middle-aged consumers [48].

4.2. Consumers' Strawberry Purchase Drivers

Consumers' choices are strongly shaped by the product's visual attributes, which act as key cues directing their selection when buying strawberries on the market. Indeed, studies on consumer behavior have highlighted that sociodemographic factors and food habits strongly influence preferences for different strawberry attributes such as color, shape, and size [49]. In our study, consumer preferences regarding strawberry visual attributes indicated that dark red was the preferred color, supported by appreciated traits such as intensity and evenness, and, in Italy and Turkey, also by brightness. The results are in line with previous evidence reported for German consumers, who show a strong preference for 'ripe' and 'red'-colored berries, which are perceived as sweeter, juicier, and more flavorful than other alternatives [34,49] On the other hand, despite efforts for broadening the range of strawberry colors, particularly with white varieties, this fruit typology have attracted

notable interest in Asian markets [50–52], while showing limited consumer appeal in the countries examined in the present study. Understanding consumer inclination for visual appeal is particularly important for producers and retailers, as it can support the development of targeted marketing strategies and product presentation adapted to different consumer segments and markets.

4.3. Consumers' Expectations and Perceptions

Consumers' expectations were also studied and revealed critical sensory characteristics that can be improved to meet specific consumer segments' requirements. Firmness and acidity were the attributes with the lowest satisfaction levels, particularly among participants from Turkey, male consumers, and younger respondents. In addition, younger respondents reported lower satisfaction with juiciness, while both younger and male consumers expressed lower satisfaction with typical aroma, overall quality, and perceived freshness. Indeed, as suggested by Kumar et al. (2017) [53], younger consumers are particularly attentive to product quality and product specifications. In addition, sensory results were in line with previous research indicating that consumer liking of strawberries is largely driven by key sensory attributes, including flavor intensity [54], and texture characteristics such as firmness [54]. Texture and taste balance were confirmed to be important determinants for the market success of strawberry cultivars [39,55]. As further highlighted by consumers' suggested improvements, the taste emerged as a key point of attention across all countries [39], together with price, mainly improvable for German consumers and organic production, suggested by Turkish consumers. These findings are in line with the previous literature [56] on growing price attention in Germany and the positive attitude for organic production by Turkish consumers [57]. Italian consumers displayed a higher demand for label information and authenticity, as previously stated by Merlino et al. 2024 [58].

The analysis of consumers' perceptions of strawberries indicated that sensory expectations, cultural background, demographic factors, and consumption contexts collectively contributed to shaping consumer responses across the three countries. Turkish consumers showed a more positive, multifunctional perception of the fruit, with strawberries associated with nutritional value, hedonic enjoyment, and social consumption. Indeed, previous studies have shown that consumers often perceive fresh fruits as natural and health-promoting foods and tend to associate them with disease prevention and overall well-being, which reinforces positive attitudes toward their consumption [59]. Italians showed a more selective perception of strawberries, mainly related to specific health attributes such as antioxidant content and the possibility of allergic reactions, indicating a more differentiated evaluation of health-related aspects of fruit consumption. In countries with strong fruit consumption traditions, such as Mediterranean regions, fruit may be perceived as a routine dietary component rather than a product with explicit functional-health connotations [39]. For German respondents, strawberries are mainly associated with statements related to consumption habits, such as eating strawberries at breakfast or outside the typical seasonal period. This suggests that the fruit may be primarily perceived within specific consumption occasions rather than as a food strongly associated with emotional or health meanings. Research on fruit consumption contexts indicates that consumers frequently associate fruits with particular eating situations (e.g., breakfast, snacks, or desserts), and these situational appropriateness perceptions can strongly influence attitudes and consumption behavior [60]. Gender differences observed are also consistent with previous research on consumer food behavior. Women showed higher agreement with statements related to health properties, positive emotions, and diverse consumption contexts, as they are generally more attentive to healthy eating patterns compared with men [61]. Age-related differences further suggest that life stage influences the way strawberries are perceived

and used. The 31–45 age group showed higher agreement with statements related to emotional responses, convenience, and consumption contexts such as breakfast, social occasions, or product preservation. This pattern may reflect the lifestyle characteristics of this demographic group, which often values the convenience factor in foods that combine pleasure, practicality, and versatility in everyday consumption [62].

4.4. The Economic Response to Consumers' Preferences

Willingness to pay (WTP) is a standard approach useful for translating consumers' preferences into an economic response, representing the maximum price a consumer is willing to pay for a product or a specific attribute [63]. A WTP approach was applied to blueberries, focusing on sensory attributes [64]. In this study, the drivers of WTP were selected from current and prospective market product features to provide guidance for breeders and stakeholders across the food chain. According to the hierarchical log-linear analysis, the results revealed a clear gradient in attribute differentiation across countries; the extent to which consumers discriminate among attributes varies substantially across cultural groups. The Turkish respondents showed the most pronounced attribute-specific structuring of responses, followed by the Italian group, whereas the German consumers exhibited comparatively uniform response patterns. This cross-group variability aligns with the significant three-way interaction observed in the log-linear analysis, confirming that the relationship between attributes and level is strongly moderated by group membership. Compared to Germany and Italy, Turkey stands out in terms of WTP extra for local products, high-quality products, organic products, old varieties, environmentally friendly products, and new varieties. In Turkey, consumers are more willing to pay higher prices across both low and high additional payment ranges. Turkey has a clear advantage in the 51–100% and +100% price ranges. In Germany and Italy, support remains largely concentrated at lower additional payment levels, with consumer interest declining significantly at higher additional payment levels. The high WTP trend in Turkey suggests that consumers are placing greater importance on both quality and product value, and are more committed to innovation, environmental responsibility, and local values. Overall, Turkey exhibits a much stronger profile than Germany and Italy in terms of consumer loyalty and WTP. Between Germany and Italy, however, notable differences emerge in the additional amount consumers are willing to pay. In Germany, the overall rate of non-payment is higher than in Italy; particularly for older varieties and environmentally friendly products, the proportion of consumers who do not pay extra is significantly higher in Germany. In general, Germany exhibits a more cautious payment profile, while Italy shows a slightly more flexible profile, albeit to a limited extent. The results related to WTP for new cultivars indicate relatively low consumer interest. These findings may provide useful guidance for breeding objectives and communication strategies, suggesting that "novelty" alone is not an appealing attribute for strawberries and should be supported by specific indications of improvement, such as quality, sustainability, and healthiness.

4.5. The Label Influence on Consumers' Choices

While consumers' visual appeal at purchase is generally focused on fruit observation [34], the use of conjoint analysis allows assessing how much the label information influences consumers' purchase decisions. In fact, the most important drivers of consumer choice were the sensory attributes, particularly texture [54], confirming their influence on purchase behavior [65]. Label claims related to functional properties were also found to be more influential than a simple visual approach, particularly among Turkish and Italian consumers. Indeed, in Mediterranean countries, unlike the dietary patterns observed in Northern European countries [66], food choices are strongly associated with health con-

siderations. The Mediterranean diet, rich in antioxidants, is widely recognized for its role in maintaining health and preventing diseases [67], and nutritional knowledge represents a key determinant in healthy food choices [68]. These findings highlight that, in order to fully realize market potential, more attention should be paid not only to the fruit itself but also to packaging and label information.

4.6. Novelty, Limitations, and Future Improvements

This research aims to understand the economic and quality constraints underlying strawberry perception and consumption, and its main innovation is to provide a cross-country overview of the key drivers shaping consumers' purchasing behavior towards strawberries. Therefore, this study presents some limitations that should be acknowledged. The use of a convenience sample restricts the generalizability of the results, as the participants may not be fully representative of the broader consumer population. Differences were observed in the distribution of residential areas: the Turkish sample consisted predominantly of rural participants (96%), whereas the Italian sample included a higher proportion of urban consumers (51%). These differences may reflect recruitment channels and local availability of consumers and could potentially influence consumer expectations and WTP. However, in terms of household expenditure per family member, the respondents interviewed showed a certain degree of homogeneity among the three countries. Therefore, the findings should be interpreted as indicative of the preferences and expectations of the sampled consumer groups rather than as directly generalizable to the entire populations of the three countries. Future studies could benefit from stratified sampling approaches to better reflect national demographic structures and to further explore the role of urban–rural differences in consumer perceptions of strawberry varieties. Another limitation is related to the absence of a back-translation procedure and the influence of cross-cultural differences on the survey results. Although a formal back-translation procedure was not conducted, the iterative review among native speakers allowed us to verify the conceptual equivalence of the items across languages. Future studies could also further strengthen cross-cultural comparability by including formal back-translation or additional cross-cultural validation procedures.

5. Conclusions

Overall, this study provides a cross-country perspective on consumer expectations and perceived quality of strawberries, highlighting the combined role of sensory attributes, cultural background, and sociodemographic factors in shaping purchasing behavior. Visual appearance, flavor-related attributes, and texture emerged as key determinants of consumer satisfaction and product choice, while country-specific consumption habits and retail structures influenced purchasing patterns. Differences in willingness to pay further revealed heterogeneous consumer attitudes toward product quality, origin, sustainability, and innovation, with Turkish consumers displaying a stronger propensity to pay premium prices for value-added attributes. These findings underline the importance of considering both sensory quality and market-specific consumer expectations when developing strawberry cultivars and marketing strategies, supporting more targeted approaches for producers, breeders, and stakeholders along the supply chain.

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References

1. Gonçalves, E.M.; Ganhão, R.; Pinheiro, J. Pre- and Postharvest Determinants, Technological Innovations and By-Product Valorization in Berry Crops: A Comprehensive and Critical Review. *Horticulturae* **2026**, *12*, 19. [CrossRef]
2. Mbuyisa, S.; Bertling, I.; Ngcobo, B.L. Temperate Berries: Preharvest Factors Contributing to Berry Quality—A Review. *Appl. Fruit Sci.* **2026**, *68*, 77. [CrossRef]
3. Hernández-Martínez, N.R.; Blanchard, C.; Wells, D.; Salazar-Gutiérrez, M.R. Current State and Future Perspectives of Commercial Strawberry Production: A Review. *Sci. Hortic.* **2023**, *312*, 111893. [CrossRef]
4. Peña Rodríguez, F.J.; Yacamán Ochoa, C.; Matarán, A. *Agri-Food Supply Chains in Southern and Eastern Europe*; Burleigh Dodds Science Publishing: Cambridge, UK, 2024; pp. 91–110.
5. Palumbo, M.; Attolico, G.; Capozzi, V.; Cozzolino, R.; Corvino, A.; de Chiara, M.L.V.; Pace, B.; Pelosi, S.; Ricci, I.; Romaniello, R.; et al. Emerging Postharvest Technologies to Enhance the Shelf-Life of Fruit and Vegetables: An Overview. *Foods* **2022**, *11*, 3925. [CrossRef]
6. Cao, S.; Qiao, L.; Wang, X.; Huang, T.; Wu, C.; Zhang, Y.; Xue, Z.; Kou, X. Discussion on Postharvest Quality, Strategies of Storage and Transportation Techniques of Blueberries: A Comprehensive Review. *Food Qual. Saf.* **2025**, *9*, fyaf038. [CrossRef]
7. Shrivastava, C.; Schudel, S.; Shoji, K.; Onwude, D.; Da Silva, F.P.; Turan, D.; Paillart, M.; Defraeye, T. Digital Twins for Selecting the Optimal Ventilated Strawberry Packaging Based on the Unique Hygrothermal Conditions of a Shipment from Farm to Retailer. *Postharvest Biol. Technol.* **2023**, *199*, 112283. [CrossRef]
8. Zhang, L.; Muscat, J.E.; Kris-Etherton, P.M.; Chinchilli, V.M.; Al-Shaar, L.; Richie, J.P. The Epidemiology of Berry Consumption and Association of Berry Consumption with Diet Quality and Cardiometabolic Risk Factors in United States Adults: The National Health and Nutrition Examination Survey, 2003–2018. *J. Nutr.* **2024**, *154*, 1014–1026. [CrossRef]
9. OECD. *European Commission Health at a Glance: Europe 2024: State of Health in the EU Cycle*; Health at a Glance: Europe; OECD Publishing: Paris, France, 2024.
10. Tulipani, S.; Romandini, S.; Alvarez Suarez, J.M.; Busco, F.; Mezzetti, B.; Battino, M. Strawberry consumption and antioxidant status in healthy human subjects. *Prog. Nutr.* **2009**, *11*, 178–182.
11. Nile, S.H.; Park, S.W. Edible Berries: Bioactive Components and Their Effect on Human Health. *Nutrition* **2014**, *30*, 134–144. [CrossRef]
12. Tulipani, S.; Romandini, S.; Suarez, J.M.A.; Capocasa, F.; Mezzetti, B.; Battino, M.; Busco, F.; Bamonti, F.; Novembrino, C. Folate Content in Different Strawberry Genotypes and Folate Status in Healthy Subjects after Strawberry Consumption. *BioFactors* **2008**, *34*, 47–55. [CrossRef] [PubMed]
13. Tulipani, S.; Alvarez-Suarez, J.M.; Busco, F.; Bompadre, S.; Quiles, J.L.; Mezzetti, B.; Battino, M. Strawberry Consumption Improves Plasma Antioxidant Status and Erythrocyte Resistance to Oxidative Haemolysis in Humans. *Food Chem.* **2011**, *128*, 180–186. [CrossRef]
14. Tsao, R.; Li, H. Phytochemical Antioxidants and Health Benefits of Dried Strawberries. In *Dried Fruits*; John Wiley & Sons, Ltd.: Hoboken, NJ, USA, 2013; pp. 175–191.

15. Giampieri, F.; Alvarez-Suarez, J.M.; Gasparrini, M.; Forbes-Hernandez, T.Y.; Afrin, S.; Bompadre, S.; Rubini, C.; Zizzi, A.; Astolfi, P.; Santos-Buelga, C.; et al. Strawberry Consumption Alleviates Doxorubicin-Induced Toxicity by Suppressing Oxidative Stress. *Food Chem. Toxicol.* **2016**, *94*, 128–137. [CrossRef]
16. Olas, B. Berry Phenolic Antioxidants—Implications for Human Health? *Front. Pharmacol.* **2018**, *9*, 78. [CrossRef]
17. Zeneli, F.; Ventura, V.; Frisio, D.G. Sustainable Fresh Strawberry Consumption: Environmental, Genetically Modified Food, and Climate Concerns in Europe and North Africa. *Front. Sustain. Food Syst.* **2024**, *8*, 1442074. [CrossRef]
18. Battino, M.; Giampieri, F.; Cianciosi, D.; Ansary, J.; Chen, X.; Zhang, D.; Gil, E.; Forbes-Hernández, T. The Roles of Strawberry and Honey Phytochemicals on Human Health: A Possible Clue on the Molecular Mechanisms Involved in the Prevention of Oxidative Stress and Inflammation. *Phytomedicine* **2021**, *86*, 153170. [CrossRef]
19. Shahraki Jazinaki, M.; Safarian, M.; Rashidmayvan, M.; Arabi, S.M.; Sahebkar, A. Impact of Strawberry Consumption on Blood Pressure in Adults: GRADE-Assessed Systematic Review and Dose-Response Meta-Analysis of Data from Randomized Controlled Trials. *Avicenna J. Phytomed.* **2025**, *15*, 1408–1423. [CrossRef]
20. Giampieri, F.; Forbes-Hernandez, T.Y.; Gasparrini, M.; Alvarez-Suarez, J.M.; Afrin, S.; Bompadre, S.; Quiles, J.L.; Mezzetti, B.; Battino, M. Strawberry as a Health Promoter: An Evidence Based Review. *Food Funct.* **2015**, *6*, 1386–1398. [CrossRef]
21. Çilek. Available online: https://apelasyon.com//icerikler/gida/cilek.html (accessed on 17 March 2026).
22. Roudeillac, P. The strawberry of the future: A necessary alliance between the discoveries of the breeders and the know-how of the growers to address food safety and consumer satisfaction. *Acta Hortic.* **2003**, *626*, 75–83. [CrossRef]
23. Kafkas, E.; Koşar, M.; Paydaş, S.; Kafkas, S.; Başer, K.H.C. Quality Characteristics of Strawberry Genotypes at Different Maturation Stages. *Food Chem.* **2007**, *100*, 1229–1236. [CrossRef]
24. Parker, C. Strawberry Fields Forever: Can Consumers See Pesticides and Sustainability as an Issue? *Sustain. Sci.* **2015**, *10*, 285–303. [CrossRef]
25. What Consumers Are Looking for in Strawberries: Implications from Market Segmentation Analysis. *Agribusiness* **2017**, *33*, 56–69. [CrossRef]
26. Varela, P.; Ares, G. Sensory Profiling, the Blurred Line between Sensory and Consumer Science. A Review of Novel Methods for Product Characterization. *Food Res. Int.* **2012**, *48*, 893–908. [CrossRef]
27. Ares, G.; Barrios, S.; Lareo, C.; Lema, P. Development of a Sensory Quality Index for Strawberries Based on Correlation between Sensory Data and Consumer Perception. *Postharvest Biol. Technol.* **2009**, *52*, 97–102. [CrossRef]
28. Wendin, K.; Egan, P.A.; Olsson, V.; Forsberg, S.; Nilsson, A.; Stenberg, J.A. Is There a Best Woodland Strawberry? A Consumer Survey of Preferred Sensory Properties and Cultivation Characteristics. *Int. J. Gastron. Food Sci.* **2019**, *16*, 100151. [CrossRef]
29. Ulrich, D.; Olbricht, K. A Search for the Ideal Flavor of Strawberry—Comparison of Consumer Acceptance and Metabolite Patterns in *Fragaria* × *Ananassa Duch*. *J. Appl. Bot. Food Qual.* **2016**, *89*, 223–234. [CrossRef]
30. Olbricht, K.; Ulrich, D.; Waurich, V.; Wagner, H.; Bicking, D.; Gerischer, U.; Drewes-Alvarez, R.; Gong, X.; Parniske, M.; Gompel, N.; et al. Breeding Potential of underutilizedFragariaspecies. In *Proceedings of the Acta Horticulturae*; Mezzetti, B., Baruzzi, G., Eds.; Ludwig-Maximilians-Universität München: Rimini, Italy, 2021; pp. 139–146.
31. Capocasa, F.; Balducci, F.; Mazzoni, L.; Marcellini, M.; Qaderi, R.; Mezzetti, B. Preliminary Results of Soilless Cultivated Strawberry Cultivars in the Autumn-Spring Cycle in the Mid-Adriatic Area. *Acta Hortic.* **2021**, *1309*, 591–596. [CrossRef]
32. Faedi, W.; Baruzzi, G.; Ballini, L.; Baroni, G.; Capriolo, G.; Lucchi, P.; Maltoni, M.L.; Martelli, G.; Mennone, C.; Zenti, F. Progress in strawberry breeding in italy. *Acta Hortic.* **2006**, *708*, 449–454. [CrossRef]
33. Pergola, M.; Maffia, A.; Carlucci, G.; Persiani, A.; Palese, A.M.; Zaccardelli, M.; Altieri, G.; Celano, G. An Environmental and Economic Analysis of Strawberry Production in Southern Italy. *Agriculture* **2023**, *13*, 1705. [CrossRef]
34. Bhat, R.; Geppert, J.; Funken, E.; Stamminger, R. Consumers Perceptions and Preference for Strawberries—A Case Study from Germany. *Int. J. Fruit Sci.* **2015**, *15*, 405–424. [CrossRef]
35. Gustavsen, G.W.; Strøm-Andersen, N. Why Strawberries? Unpacking the Drivers of Consumer Preferences. 2026. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=6103769 (accessed on 14 March 2026).
36. Senger, E.; Osorio, S.; Olbricht, K.; Shaw, P.; Denoyes, B.; Davik, J.; Predieri, S.; Karhu, S.; Raubach, S.; Lippi, N.; et al. Towards Smart and Sustainable Development of Modern Berry Cultivars in Europe. *Plant J.* **2022**, *111*, 1238–1251. [CrossRef]
37. Asioli, D.; Aschemann-Witzel, J.; Caputo, V.; Vecchio, R.; Annunziata, A.; Næs, T.; Varela, P. Making Sense of the "Clean Label" Trends: A Review of Consumer Food Choice Behavior and Discussion of Industry Implications. *Food Res. Int.* **2017**, *99*, 58–71. [CrossRef] [PubMed]
38. Lusk, J.L.; Hudson, D. Willingness-to-Pay Estimates and Their Relevance to Agribusiness Decision Making. *Rev. Agric. Econ.* **2004**, *26*, 152–169. [CrossRef]
39. Predieri, S.; Lippi, N.; Daniele, G.M. What Can We Learn from Consumers' Perception of Strawberry Quality? *Acta Hortic.* **2021**, *1309*, 987–994. [CrossRef]
40. Rossi, E.S.; Cacchiarelli, L.; Severini, S.; Sorrentino, A. Consumers Preferences and Social Sustainability: A Discrete Choice Experiment on 'Quality Agricultural Work' Ethical Label in the Italian Fruit Sector. *Agric. Econ.* **2024**, *12*, 14. [CrossRef]

41. Alnaim, N.; AlSanad, D.S.; Albelali, S.; Almulhem, M.; Almuhanna, A.F.; Attar, R.W.; Alsahli, M.; Albagmi, S.; Bakhshwain, A.M.; Almazrou, S.; et al. Effectiveness of ChatGPT in Remote Learning Environments: An Empirical Study with Medical Students in Saudi Arabia. *Nutr. Health* **2025**, *31*, 1035–1046. [CrossRef]
42. Predieri, S.; Cianciabella, M.; Daniele, G.M.; Gatti, E.; Lippi, N.; Magli, M.; Medoro, C.; Rossi, F.; Chieco, C. Italian Consumers' Awareness of Climate Change and Willingness to Pay for Climate-Smart Food Products. *Sustainability* **2023**, *15*, 4507. [CrossRef]
43. Laaksonen, O.; Knaapila, A.; Niva, T.; Deegan, K.C.; Sandell, M. Sensory Properties and Consumer Characteristics Contributing to Liking of Berries. *Food Qual. Prefer.* **2016**, *53*, 117–126. [CrossRef]
44. Tennant, D.R.; Davidson, J.; Day, A.J. Phytonutrient Intakes in Relation to European Fruit and Vegetable Consumption Patterns Observed in Different Food Surveys. *Br. J. Nutr.* **2014**, *112*, 1214–1225. [CrossRef]
45. Agudo, A.; Slimani, N.; Ocké, M.C.; Naska, A.; Miller, A.B.; Kroke, A.; Bamia, C.; Karalis, D.; Vineis, P.; Palli, D.; et al. Consumption of Vegetables, Fruit and Other Plant Foods in the European Prospective Investigation into Cancer and Nutrition (EPIC) Cohorts from 10 European Countries. *Public Health Nutr.* **2002**, *5*, 1179–1196. [CrossRef] [PubMed]
46. Küçük, N.; Urak, F.; Bilgic, A.; Florkowski, W.J.; Kiani, A.K.; Özdemir, F.N. Fruit and Vegetable Consumption across Population Segments: Evidence from a National Household Survey. *J. Health Popul. Nutr.* **2023**, *42*, 54. [CrossRef]
47. Mortimer, G.; Clarke, P. Supermarket Consumers and Gender Differences Relating to Their Perceived Importance Levels of Store Characteristics. *J. Retail. Consum. Serv.* **2011**, *18*, 575–585. [CrossRef]
48. Herzig, J.; Zander, K. Determinants of Consumer Behavior in Short Food Supply Chains: A Systematic Literature Review. *Agric. Econ.* **2025**, *13*, 21. [CrossRef]
49. Sparacino, A.; Ollani, S.; Baima, L.; Oliviero, M.; Borra, D.; Rui, M.; Mastromonaco, G. Analyzing Strawberry Preferences: Best–Worst Scaling Methodology and Purchase Styles. *Foods* **2024**, *13*, 1474. [CrossRef]
50. Seki, H.; Murakami, H.; Ma, T.; Tsuchikawa, S.; Inagaki, T. Evaluating Soluble Solids in White Strawberries: A Comparative Analysis of Vis-NIR and NIR Spectroscopy. *Foods* **2024**, *13*, 2274. [CrossRef]
51. Guan, L.; Wilson, Z.A.; Zhao, M.; Qiao, Y.; Wu, E.; Wang, Q.; Yuan, H.; Xu, L.; Pang, F.; Cai, W.; et al. New Germplasm for Breeding: Pink-Flowered and White-Fruited Strawberry. *HortScience* **2023**, *58*, 1005–1009. [CrossRef]
52. Chang, L.L.; Zhang, Y.T.; Dong, J.; Sun, R.; Sun, J.; Zhong, C.F.; Zhang, H.L.; Zheng, S.Q.; Wang, G.X. Volatile Components in Three Strawberry Cultivars with White Flesh. *Acta Hortic.* **2021**, *1309*, 1041–1046. [CrossRef]
53. Kumar, N.; Kapoor, S. Do Labels Influence Purchase Decisions of Food Products? Study of Young Consumers of an Emerging Market. *Br. Food J.* **2017**, *119*, 218–229. [CrossRef]
54. Fan, Z.; Hasing, T.; Johnson, T.S.; Garner, D.M.; Schwieterman, M.L.; Barbey, C.R.; Colquhoun, T.A.; Sims, C.A.; Resende, M.F.R.; Whitaker, V.M. Correction: Strawberry Sweetness and Consumer Preference Are Enhanced by Specific Volatile Compounds. *Hortic. Res.* **2021**, *8*, 224. [CrossRef]
55. Testoni, A.; Nuzzi, M. Analytical and sensory evaluation of two strawberry cultivars to improve market acceptability. *Acta Hortic.* **2006**, *708*, 349–354. [CrossRef]
56. Hempel, C.; Roosen, J. Growing Importance of Price: Investigating Food Values before and during High Inflation in Germany. *Agric. Econ.* **2024**, *55*, 1026–1039. [CrossRef]
57. Almli, V.L.; Asioli, D.; Rocha, C. Organic Consumer Choices for Nutrient Labels on Dried Strawberries among Different Health Attitude Segments in Norway, Romania, and Turkey. *Nutrients* **2019**, *11*, 2951. [CrossRef]
58. Merlino, V.M.; Blanc, S.; Fornara, F.; Borra, D.; Massaglia, S.; Mosca, O. A Cross-Countries Comparison of Women Opinions and Perceptions About Organic Products. In *Proceedings of the Innovation and Knowledge in Agri-Food and Environmental Systems*; Cavicchi, A., Caracciolo, F., Crescimanno, M., De Salvo, M., Galati, A., Seccia, A., Secco, L., Eds.; Springer: Cham, Switzerland, 2024; pp. 167–171.
59. Wang, Y.; Liu, L.; Wei, Y. The Influence of Consumption Purpose on Consumer Preferences for Fruit Attributes: The Moderating Effect of Color Perception. *Foods* **2025**, *14*, 1902. [CrossRef]
60. Tarancón, P.; Fernández-Serrano, P.; Besada, C. Consumer Perception of Situational Appropriateness for Fresh, Dehydrated and Fresh-Cut Fruits. *Food Res. Int.* **2021**, *140*, 110000. [CrossRef] [PubMed]
61. Medoro, C.; Cianciabella, M.; Magli, M.; Daniele, G.M.; Lippi, N.; Gatti, E.; Volpe, R.; Longo, V.; Nazzaro, F.; Mattoni, S.; et al. Food Involvement, Food Choices, and Bioactive Compounds Consumption Correlation During COVID-19 Pandemic: How Food Engagement Influences Consumers' Food Habits. *Nutrients* **2022**, *14*, 1490. [CrossRef] [PubMed]
62. Ogundijo, D.A.; Tas, A.A.; Onarinde, B.A. Age, an Important Sociodemographic Determinant of Factors Influencing Consumers' Food Choices and Purchasing Habits: An English University Setting. *Front. Nutr.* **2022**, *9*, 858593. [CrossRef]
63. An Empirical Comparison of Methods for Measuring Consumers' Willingness to Pay on JSTOR. Available online: https://www.jstor.org/stable/40216671?seq=1 (accessed on 17 March 2026).
64. Canales, E.; Gallardo, R.K.; Iorizzo, M.; Munoz, P.; Ferrão, L.F.; Luby, C.; Bassil, N.; Pottorff, M.; Perkins-Veazie, P.; Sandefur, P.; et al. Willingness to Pay for Blueberries: Sensory Attributes, Fruit Quality Traits, and Consumers' Characteristics. *HortScience* **2024**, *59*, 1207–1218. [CrossRef]

65. Rai, S.; Wai, P.P.; Koirala, P.; Bromage, S.; Nirmal, N.P.; Pandiselvam, R.; Nor-Khaizura, M.A.R.; Mehta, N.K. Food Product Quality, Environmental and Personal Characteristics Affecting Consumer Perception toward Food. *Front. Sustain. Food Syst.* **2023**, *7*, 1222760. [CrossRef]
66. Slimani, N.; Fahey, M.; Welch, A.; Wirfält, E.; Stripp, C.; Bergström, E.; Linseisen, J.; Schulze, M.B.; Bamia, C.; Chloptsios, Y.; et al. Diversity of Dietary Patterns Observed in the European Prospective Investigation into Cancer and Nutrition (EPIC) Project. *Public Health Nutr.* **2002**, *5*, 1311–1328. [CrossRef]
67. Cianciabella, M.; Predieri, S.; Tamburino, R.; Medoro, C.; Volpe, R.; Maggi, S. Health-Promoting Potential of the Mediterranean Diet and Challenges for Its Application in Aging Populations. *Nutrients* **2025**, *17*, 3675. [CrossRef]
68. Aureli, V.; Rossi, L. Nutrition Knowledge as a Driver of Adherence to the Mediterranean Diet in Italy. *Front. Nutr.* **2022**, *9*, 804865. [CrossRef]