



Article

Greek Semi-Hard and Hard Cheese Consumers' Perception in the New Global Era

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Abstract: The COVID-19 pandemic is almost over but has already left its mark and is changing the world fast and drastically in all social, economic, and cultural aspects of humanity, including consumers' choices and motives for foods. Since cheese is a major dietary food consumed daily worldwide, motives for its purchase and consumption in the new era are an important parameter affecting current and future production and sustainable regional development. The aim of the study was to investigate the impact of COVID-19 on Greek consumers' motives for quality semi-hard and hard cheese, including the "Ladotyri" hard cheese. Consumers' motives were tested using variables of quality semi-hard and hard cheese, such as purchase and consumption, preference of choice, preference, and knowledge of the Ladotyri cheese. A self-response questionnaire survey was carried out in November and December 2022 on a sample of 860 participants, the majority being young people aged 18-25 (83.9%), through the Google platform. Basic statistical tools, combined with cross and chi-square tests, were used to analyze the collected data. The results indicate no significant changes in consumers' motives except a significant decline in consumption, reaching up to 8.4%. Consumers continue to purchase the semi-hard and hard cheese from the supermarket (90%), with preference for the most known kinds, such as kasseri and graviera, consuming it at home (90.9%), daily (31.8%), or two times per week (38.3%), primarily with bread and olives (57.6%), followed by meat (53%). Price remains the most important information for the selection of semi-hard and hard cheese (73.5%), taste (97%) among the organoleptic parameters, texture (70.9%) among the appearance parameters, origin of milk (63.9%) among the sustainable parameters, and value for money (85.8%) among the general characteristics of the cheese. The participants expressed similar motives for the "Ladotyri" Mytilinis hard cheese, appreciating the olive oil combined with the cheese (79.7%) and the possible production as a non-refrigerated cheese (65.2%), even though the majority of them would not buy it today (57.4%). Our findings indicate that the sustainability and growth of the quality semi-hard and hard cheese in the new era should stick to the good practices of production, promotion, and sales developed before the pandemic, exploring, however, new avenues and practices to increase consumption, which is currently declining.

Keywords: questionnaire survey; post-COVID-19 era; Greek semi-hard and hard cheese; Ladotyri cheese of Mytilene; consumer's purchase and consumption of cheese; quality cheese; food choice motives



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1. Introduction

The world is changing rapidly following the COVID-19 pandemic and also the current war in Ukraine [1,2], with unforeseen challenges and outcomes in the market, including the selection process of goods, such as foods by consumers [3]. It remains to be seen whether or not the global economy will enter into a long-lasting recession and deglobalization in the near future [4]. Recent studies are evaluating the changes on food marketing in the new era in different countries such as Australia [5], New Zealand [6], Ethiopia [7], and Italy [8],

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with diverse findings in each case [9]. These changes are affecting the "new" propositions for consumers' food choice motives caused by the pandemic, which we have presented in a recent systematic review [10]. The aim of this paper is to identify the "new" consumers' perceptions for quality semi-hard and hard cheeses in the new era, thus providing practical directions to cheese producers for growth, expansion, competitive advantage, and regional development. The study is focused on young people (students) in order to gain a better future prospective and value of the results obtained, since it is the new generation that better shows the trends of the future.

Literature Review

Cheese is an important category not only as a food able to provide nutrients [11], but also as a commodity with unquestionable economic relevance for worldwide trade [12]. Semi-hard and hard cheese is a major dietary cheese category consumed daily worldwide [13,14]. The diversity in technology is enormous, varying the type of milk used, the production operations, the lactic cultures, the maturation times, and conditions, providing final products with a wide range of characteristics in terms of taste, flavor, texture, color, shape, or size [15]. Unlike the industrial semi-hard and hard cheeses, the traditional ones are also imprinted with a social and cultural heritage that makes them unique [16].

Greece has been one of the most cheese-producing EU countries since ancient times [17]. Numerous traditional cheeses are made throughout Greece today. Some of them are types of the same cheese variety, have somewhat different steps in technology or possibly the same, but are known with different local names [17]. Greek traditional cheeses, a total of 30 varieties, can be grouped, according to their technology of manufacture, as white brined (4), other brined (2), soft (5), semi-hard (3), hard (12), and whey (4) cheeses, as shown in Table 1 [17].

Table 1. Greek cheeses today.

Category	Varieties				
Brined Cheeses					
1. White Brined Cheeses	1. Feta	2. Telemes			
1. White brined Cheeses	3. Kalathaki	4. Touloumotyri			
2. Other brined Cheeses	1. Batsos	2. Sfela			
	1. Anevato	2. Galotyri			
3. Soft cheeses	3. Katiki DOmokou	4. Kopanisti			
	5. Pichtogalo Chanion				
	1. Kasseri	2. Formaella Arachovas			
4. Semi-hard cheeses	3. Krassotyri				
	1. Graviera	2. Graviera Agrafon			
	3. Graviera Kritis	4. Graviera Naxou			
	5. Kefalotyri	6. Kefalograviera			
5. Hard cheeses	7. Ladotyri Mytilinis	8. Manoura			
	9. Metsovone	10. San Michali			
	11. Xinotyri	12. Melichloro			
(XA71 1	1. Myzithra	2. Anthotyros			
6. Whey cheeses	3. Manouri	4. Xinomyzithra Kritis			

Cheeses, being traditional foods (TFs), have geographical and traditional indicators in the EU for the promotion and protection of the names of quality foodstuffs, their origin, and authenticity (e.g., PDO: protected designation of origin, PGI: protected geographical Sustainability **2023**, 15, 5825 3 of 18

indication, TGI: traditional specialty guaranteed) [18]. Greece has incorporated the provisions of the Regulation in the National Legislation with Ministerial Decree (3321/145849) issued by the Hellenic Ministry of Food and Agricultural Development since 2006 [19]. Among the registered Greek cheeses, 22 are PDOs and 1 is a PGI, with no TGIs registered so far [20].

Greek feta cheese is by far the major Greek cheese known and exported worldwide, a PDO product produced exclusively in Greece, at 134,025 tons out of the total 148,698 tons of PDO/PGI certified Greek cheeses in 2021 [20]. Second in the order of production and consumption are the Greek well-known semi-hard and hard cheeses (called in Greek traditionally as "yellow cheeses") such as kasseri, graviera, kefalotyri, and metsovone. On the island of Lesvos (also called Mytilini), a PDO hard cheese named Ladotyri is produced from local sheep milk or a mixture of sheep milk and caprine, up to a maximum of 30% (w/w) [21]. It is a type of good-quality Kefalotyri, with its main characteristic being that it is preserved in olive oil, as indicated also by its name, "ladi" meaning oil and "tyri" cheese. Instead of olive oil, when the cheese obtains a moisture content of lower than 40%, it can be covered with paraffin, but the name Ladotyri is still used [22]. The annual production of Ladotyri Mytilinis' cheese was only 342 tons in 2021 [20], even though there is the potential for increased sales as a unique (in olive oil) local cheese. Such an expansion in the market would be extremely beneficial for the islands' economy, since it would increase local breeding, livestock, and farming together with increased employment.

In view of this expected increase in cheese consumption, researchers have been systemically studying consumers' preferences for cheeses over the last two years (2020–2021), within the context of the COVID-19 pandemic and beyond, with results useful for academia and industry. Among educated young consumers in the Czech Republic, research on the consumption of organic cheese identified two segments, the "rationality involvement consumer" and the "non-rationality involvement consumer", with different characteristics for each [23]. Menozzi et al. report that perceived behavioral control and attitude are the significant predictors of intention to purchase protected designation of origin (PDO)labelled cheese in France and Italy [24]. Del Toro-Gipson et al. found that consumers differentiated smoke aroma and flavor among smoked cheddar cheeses and preferred cherry wood-smoked cheeses over apple wood- or hickory-smoked [25]. Most hot pepper cheese consumers preferred their cheese with higher heat intensity and were also motivated by the visual characteristics of it [26]. A segmentation analysis conducted by Zhllima et al. revealed that local cheese is preferred to imported cheese, and the main selection criteria for food are the producer name/brand and knowing the seller, with educated female consumers buying cheese mainly in supermarkets [27]. Attitudes for sustainable mountain cheese show the influence of green consumers' values on the brand choice and the strong relationship between the values of green consumers and animal well-being [28]. The incorporation of ingredients with sensory properties familiar to East and Southeast Asian consumers offers the potential for the development of cheese products for consumers in these markets [29]. Ojeda et al. perceived that sensory quality is related to liking but is also modulated by product familiarity for the European cheeses [30]. A study by Endrizzi et al., showed that overall liking was significantly higher in cheeses presented as "mountain pasture product" both in whole panel and in consumer segments with different attitudes [31]. Consumers from Serbia, Croatia, and Spain valued artisan cheeses more than industrial in terms of healthiness and quality, but they believe that there is still much to be done in terms of proper packaging, labelling, branding, widening of assortment, and providing better availability [32]. Among a cohort of young, educated, internationally mobile Chinese consumers it was found that individuals' innovativeness was an important factor that influences their openness to cheese products when moving beyond familiar foods [33].

Quality semi-hard and hard cheeses, like the rest of TFs, as described above, have the potential to become the cheese of choice for the citizens in Europe and elsewhere. To contribute to this potential, the factors connected with consumers' perception for the quality Sustainability **2023**, 15, 5825 4 of 18

semi-hard, hard, and Ladotyri Mytilinis cheeses today are evaluated here to identify the "new" consumers' motives, if changes have occurred. Ladotyri is included in the study as a representative, local, uniquely produced (in olive oil), hard cheese with very low consumption so far, but it has the potential to grow once the "new" consumer perceptions and attitudes for it are identified here, which will lead to the implementation of the targeted strategic promotion campaign. To accomplish the scope, following the literature on the parameters of consumers' preference, perceptions, attitudes for semi-hard, hard, and Ladotyri Mytilinis cheeses, the study examines the following three determinants of consumers' motives and preference on these quality Greek cheeses in the post-COVID-19 period:

- Consumers' motives for the purchase and consumption of Greek semi-hard and hard cheese. This involves data regarding place of purchase (including online), place of consumption, quantities purchased and consumed before and after COVID-19, as well as consumption preference on the combination of meals with different kinds of semi-hard and hard cheeses (graviera, kefalograviera, kasseri, kefalotyri, ladotyri).
- Consumers' preference for quality Greek semi-hard and hard cheese. This involves
 data regarding traditional parameters, organoleptic parameters, appearance, sustainability, and general characteristics.
- Consumers' preference and knowledge for the Ladotyri cheese (of Lesvos). This
 involves data regarding knowledge for the specific cheese, its unique characteristics,
 possible added value of the olive oil included, possible added value if it was produced
 as a non-refrigerated cheese preserved in olive oil, preference on the combination of
 meals, on place of purchase, and perception for Lesvos' quality foods.

2. Materials and Methods

2.1. Data Collection and Sample Characterization

This survey was based on a questionnaire prepared to investigate the information that influences consumers' motives and preference on Greek semi-hard and hard cheese in the new era. The questionnaire was built up in four parts and it is presented in Table S1 in the Supplementary Section. Each question was created in such a way that it could provide the best possible information for each section. The parts were built up using a similar previous study [34]. The first part included questions about the sociodemographic characteristics of the respondents, specifically gender, age, level of education, civil state, job situation, and permanent residency in different parts of Greece. The second part consisted of ten questions designed to assess the motives for the purchase and consumption of Greek semi-hard and hard cheese in the post-COVID era. The third part included five questions focused on the participants' preferred choice for quality Greek cheese. Finally, the fourth part consisted of ten questions about the knowledge and preference of the "Ladotyri" Greek semi-hard and hard cheeses. To guarantee the quality of the data obtained through the application of the questionnaire, this was pretested with 50 respondents. This phase was pivotal to ensure that the questions were clear and understandable, so that respondents could answer them easily. The research was carried out using electronic questionnaires as it was easier to distribute and collect. The distribution method chosen was by e-mail, as similarly performed in recent papers investigating consumer behaviors [35–37]. The sample of the population is very well distributed among the 5 geographic parts of Greece, with emphasis, however, on students.

A higher rate for female respondents, recorded at 76.1%, is similar to the observation by other papers as well [38–41], leading to the conclusion that women, even students, respond more willingly to food-related surveys as they are primarily involved in household organization. The research questionnaire was created through the Google Platform and the Google Forms function due to the ability of direct export of the results to an Excel sheet for further processing. The geographical context for the present study was all the Greek regions divided in five parts. Respondents received e-mails explaining the purpose of the research and the importance of their participation, while there was an attached link that led to the electronic form of the questionnaire. Responses were anonymous and no personal

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information was collected or correlated with any of the responses to ensure the protection of participants.

The survey took place during the period of November-December 2022, at the decline of the pandemic, and consisted of 860 participants (Table 2).

Table 2. Sociodemographic characterization of the sample.

Variable	Groups	(%)
C 1	Male	23.9
Gender	Female	76.1
	18–25	83.9
	26–35	4.3
Age	36–45	4.0
	46–55	5.7
	56+	2.1
	None/Primary school	0.1
Level of education	Secondary school	10.7
	High school	0.0
	University	89.1
	Single	85.9
	Married	10.8
Civil state	Divorced	2.8
	Widow/widower	0.5
	Employed	15.8
Job situation	Unemployed	1.1
job situation	Student	82.6
	Retired	0.6
Permanent resident in Greece	NORTH GREECE (regions of	29.0
	Macedonia—Thrace)	27.0
	WEST GREECE (region of	37.2
	Epirus—Etoloakarnania prefecture)	
	CENTRAL GREECE (including Athens)	20.4
	SOUTH GREECE (region of Peloponnese)	5.0
	ISLANDS (Ionian and Aegean)	8.3

Regarding Shouthe spatial distribution, 37.2% of participants were permanent residents of west Greece, 20.4% of central Greece (including the capital of Athens), 29% residents of north Greece, 8.3% residents of the Greek islands, and 5% of south Greece, leading to a wide geographical distribution. The vast majority of the participants were aged 18–25 (83.9%) followed by 46–55, 26–35, and 36–45 years (5.7%, 4.3%, 40%, respectively). Regarding the level of education, most of the participants had higher education (university, 89.1%), while the employment status category was dominated by students (82.6%) followed by employed (15.8%) participants. Regarding the civil state of the participants, most were single at 85.9%, followed by married at 10.8% and divorced at 02.8% and only 0.5% were widows.

2.2. Data Analysis

The exploratory analysis of the data was achieved through basic statistical tools. The survey was prepared in Greek and divided into four parts, as detailed above:

Part 1. Sociodemographic data;

Part 2. Purchase and consumption of Greek semi-hard and hard cheese in the post-COVID-19 era;

Part 3. Preference of choice for quality Greek semi-hard and hard cheese in the post-COVID-19 era;

Part 4. Knowledge and preference of "Ladotyri" in post-COVID-19 era.

The sociodemographic characteristics were collected in the first part of the questionnaire (six questions—one dichotomous, one ordinal variable, and four nominal variables). Sustainability **2023**, 15, 5825 6 of 18

The second part recorded information concerning the purchase and consumption motives of participants (ten questions—two ordinal variables, three nominal variables, two dichotomous, and three multiple choices with each response considered as dichotomous variables). The third part consisted of five questions (ordinal variables) recording the preference of choice for quality Greek semi-hard and hard cheese of the participants, and finally, the fourth part (ten questions—two multiple choices with each response considered as dichotomous variables, six dichotomous, and two nominal variables) recorded information about the knowledge and preference of "Greek semi-hard and hard cheese".

Data analysis was performed using IBM SPSS Statistics for Windows (Version 25.0, IBM Corp., Armonk, NY, USA), as described by Skalkos et al. [42]. The nonparametric tests were used. A nonparametric chi-square test was performed to test the distribution of variables of each group and response based on the hypothesized equal proportions for each variable. The chi-square independence test was used to determine whether there is an association between variables. Post hoc tests for the chi-square independence test were used. The pairwise comparisons (z-tests) for independent proportions, followed by a Bonferroni correction, were applied to the data. In order to measure the strength of association (when it is present between two variables), the Phi, Cramer's V, or Kendall's tau-b test were used. The Cramer's V coefficient used in the chi-square tests, ranging from 0 to 1, can be interpreted as follows: $V \approx 0.1$ is a weak association, $V \approx 0.3$ is a moderate association, and $V \approx 0.5$ or over is a strong association. In all the tests performed, the level of significance considered was 5% (p < 0.05).

3. Results

Table 3 presents the participants' motives on purchase and consumption of Greek semi-hard and hard cheese. The results show that most of the participants before the pandemic purchased semi-hard and hard cheese very often (70.9%) and often (21.0%) from the supermarket, while they purchased from the neighboring grocery store only very often (8.8%) and often (19.9%), whereas online purchases were very low (0.3% very often and 0.2% often). These results seem to be the same in the post-COVID-19 era, as the very often purchase from the supermarket answer remained 71.0.% and the often answer 21.4%, with purchases from grocery store also remaining similar (20.3% often answer). Only the online increased slightly to 1.6% from 0.5% (0.8% very often and 0.8% often). Regarding the quantities and the money spent for semi-hard and hard cheese per month, one Kg (65.2%) and EUR 10 (55.5%) were the most popular answers. The majority of the participants consume less semi-hard and hard cheese today (58.4%) as compared with the before the COVID-19 period; daily (31.8%) and two times per week (38.3%) are the most popular frequencies of consumption.

The participants, among the Greek semi-hard and hard cheeses, exhibit high preference for the well-known kasseri (59.8%), and graviera (57.3%), less preference for kefalotyri (41.4%) and kefalograviera (34.9%), and very limited preference for ladotyri (3.0%), the quality cheese of reference in this study. They consume slightly more Greek semi-hard and hard cheese, by 52.4%, as compared with the imported varieties (i.e., mozzarella, cheddar, edam, etc.). The participants today consume semi-hard and hard cheese at home (90.9%) on different occasions such as during dinner (34.1%), during lunchtime (12.2%), occasionally (19.4%), with friends (11.8%), and only at a restaurant when they go out (24%). In terms of preference of meals with semi-hard and hard cheese, bread and olives (57.6%), meat (53.0%), chicken (45.2%), wine (42.3%), and alone (22.3%) are the most preferable accompaniment meals.

 $\textbf{Table 3.} \ \ \textbf{Participants'} \ \ \textbf{motives on purchase and consumption of Greek semi-hard and hard cheese.}$

From Where DID YOU PURCHASE the Greek Semi-Hard and Hard Cheese You Consumed before COVID-19?	Never	Very Seldom	Seldom	Often	Very Often		
From supermarket	2.0 *	2.1	3.9	21.0	70.9		
From the neighborhood grocery store	26.5	19.1	25.7	19.9	8.8		
From open market	82.4	9.4	5.2	2.3	0.8		
Via online	96.5	2.3	0.8	0.2	0.3		
From where DO YOU PURCHASE the GREEK SEMI-HARD AND HARD CHEESE you consume now?	Never	Very seldom	Seldom	Often	Very often		
From supermarket	1.9	1.9	3.8	21.4	71.0		
From the neighborhood grocery store	31.6	16.8	22.6	20.3	8.6		
From open market	85.5	7.2	5.1	1.1	1.1		
Via online	93.6	3.4	1.4	0.8	0.8		
How much GREEK SEMI-HARD AND HARD CHEESE do you buy per month today (ONLY one answer)	1 kg per month	2 kg per month	3 kg per month	4 kg per month	0 kg per month		
today (GIVEI one answer)	65.2	21.0	6.0	2.7	5.2		
How much MONEY do you spend MONTHLY for the purchase of GREEK SEMI-HARD AND HARD CHEESE	<eur 10<="" td=""><td>EUR 10–20</td><td>EUR 20–30</td><td><eur 30<="" td=""><td></td><td></td><td></td></eur></td></eur>	EUR 10–20	EUR 20–30	<eur 30<="" td=""><td></td><td></td><td></td></eur>			
	55.5	32.9	9.0	2.6			
How often do you consume GREEK SEMI-HARD AND HARD CHEESE	Every day	Once a week	Two times per week	Once every two weeks	Once per month		
	31.8	14.4	38.3	7.9	7.6		
Do you consume MORE or LESS GREEK SEMI-HARD AND HARD CHEESE TODAY as compared with the period BEFORE COVID-19	More	Less					
	41.6	58.4					
Do you consume MORE GREEK SEMI-HARD AND HARD CHEESE as compared with IMPORTED SEMI-HARD AND HARD CHEESE (i.e., cheddar, pecorino, edam, etc.)	More	Less					
peconino, eduni, etc.,	52.4	47.6					
Which KINDS OF GREEK SEMI-HARD AND HARD CHEESES do you consume TODAY	Graviera	Kefalograviera	Ladotyri	Kaseri	Kefalotiri	Others	
	57.3	34.9	3.0	59.8	41.4	26.1	
With what do you consume THE GREEK SEMI-HARD AND HARD CHEESE TODAY	Meat	Fish	Wine	Chicken	Fruits	Bread and Olives	Alone
	53.0	3.4	42.3	45.2	10.2	57.6	22.3
Where do you consume mostly the SEMI-HARD AND HARD CHEESE TODAY?	At home	At the restaurant	With friends	During lunchtime	During the dinner	Occasionally	
	90.9	24.0	11.8	12.2	34.1	19.4	

^{*} Values represent %.

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The results of the chi-square test in Table S2 showed significant differences between consumers' motives on purchase and consumption of Greek semi-hard and hard cheeses in terms of:

1. Purchase of cheese before COVID-19.

From supermarket: between level of education ($x^2 = 51.174$, p = 0.000). From the neighborhood grocery store: between residency ($x^2 = 27.677$, p = 0.035). From open market: between residency ($x^2 = 53.786$, p = 0.000).

Via online: between age ($x^2 = 63.711$, p = 0.001), level of education ($x^2 = 325.401$, p = 0.000), civil state ($x^2 = 83.932$, p = 0.000), job situation ($x^2 = 40.661$, p = 0.001), and residency ($x^2 = 46.313$, p = 0.000).

2. Purchase of cheese today.

From supermarket: between gender ($x^2 = 21.641$, p = 0.013) and level of education ($x^2 = 53.735$, p = 0.001).

From the neighborhood grocery store: between residency ($x^2 = 33.018$, p = 0.007).

From open market: between residency ($x^2 = 41.879$, p = 0.000).

Via online: between level of education ($x^2 = 134.631$, p = 0.001), civil state ($x^2 = 35.527$, p = 0.001), and job situation ($x^2 = 23.211$, p = 0.026).

3. Quantity of cheese purchased per month.

One kg: between gender ($x^2 = 6.912$, p = 0.013) and residency ($x^2 = 15.865$, p = 0.003). Four kg: between gender ($x^2 = 4.987$, p = 0.026), level of education ($x^2 = 37.171$, p = 0.000), civil state ($x^2 = 35.691$, p = 0.000), and residency ($x^2 = 10.457$, p = 0.033).

4. Money spent per month.

Up to EUR 10: between gender ($x^2 = 15.895$, p = 0.001), age ($x^2 = 53.769$, p = 0.001), civil state ($x^2 = 34.771$, p = 0.001), job situation ($x^2 = 59.505$, p = 0.001), and residency ($x^2 = 25.823$, p = 0.000).

Between EUR 10 to 20: between age ($x^2 = 16.068$, p = 0.003), civil state ($x^2 = 13.480$, p = 0.004), and job situation ($x^2 = 18.486$, p = 0.000).

Between EUR 20 to 30: between gender ($x^2 = 8.820$, p = 0.003), age ($x^2 = 14.338$, p = 0.006), civil state ($x^2 = 10.278$, p = 0.016), job situation ($x^2 = 16.673$, p = 0.001), and residency ($x^2 = 19.487$, p = 0.001).

More than EUR 30: between age ($x^2 = 52.805$, p = 0.000), level of education ($x^2 = 38.768$, p = 0.000), civil state ($x^2 = 24.230$, p = 0.000), job situation ($x^2 = 23.300$, p = 0.000), and residency ($x^2 = 11.935$, p = 0.018).

5. Kinds of cheese consumed.

Graviera: between age ($x^2 = 11.419$, p = 0.022), job situation ($x^2 = 14.762$, p = 0.002), and residency ($x^2 = 27.703$, p = 0.000).

Kefalograviera: between job situation ($x^2 = 9.770$, p = 0.021) and residency ($x^2 = 16.059$, p = 0.003).

Ladotyri: between gender ($x^2 = 5.004$, p = 0.025).

Kaseri: between age ($x^2 = 37.966$, p = 0.000), civil state ($x^2 = 13.117$, p = 0.004), job situation ($x^2 = 22.123$, p = 0.000), and residency ($x^2 = 125.493$, p = 0.001).

Kefalotyri: between age ($x^2 = 20.001$, p = 0.000) and civil state ($x^2 = 11.117$, p = 0.008).

6. Accompaniment meals.

Fish: between gender ($x^2 = 5.229$, p = 0.022) and level of education ($x^2 = 28.651$, p = 0.000).

Chicken: between age ($x^2 = 9.807$, p = 0.044) and residency ($x^2 = 10.590$, p = 0.032). Bread and olives: between civil state ($x^2 = 14.085$, p = 0.003) and residency ($x^2 = 15.560$, p = 0.004).

Alone: age ($x^2 = 12.202$, p = 0.016) and civil state ($x^2 = 9.896$, p = 0.019).

7. Where do you consume wine today.

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At home: between gender ($x^2 = 4.450$, p = 0.035). At the restaurant: between civil state ($x^2 = 8.000$, p = 0.046). With friends: between level of education ($x^2 = 7.449$, p = 0.024) and civil state ($x^2 = 12.382$, p = 0.006).

During lunchtime: between age ($x^2 = 10.436$, p = 0.034), level of education ($x^2 = 7.203$, p = 0.027), and civil state ($x^2 = 20.972$, p = 0.000).

During dinner: civil state ($x^2 = 10.214$, p = 0.017).

Table 4 represents the frequencies concerning preference of choice for quality Greek semi-hard and hard cheese in the post-COVID-19 era. Participants find much and very much importance in the price (73.5%), the branding of the cheese (37.8%), the date of production (44.5%), the geographical origin (30.7%), and the existence of quality certificates (44.1%) for the selection of a quality Greek semi-hard and hard cheese. The organoleptic parameter that most seems to affect the selection of semi-hard and hard cheese by far is the taste (75.3%—very much), followed to a lesser extent by odor (38.3%—very much), aroma (36.7%—much), and hardness (34.6%—much). Among the appearance parameters with much and very much preference, the texture (70.9%) is by far the first choice by the participants, followed by the overall appearance (59.6%), the color (54.3%), and to a lesser extent the size of the package (33.3%) and the package appearance (22.7%). The sustainable characteristics seem to be of medium level of concern for the selection of semi-hard and hard cheese, with much and very much selection choice; the origin of milk by far the most important parameter (63.9%), followed by nutritional indications (51.2%), the percentage of fats (43.2%), the organic nature (30.6%), and low salt content (28.5%). Finally, from the general characteristics, only the rational value for money concerns the participants (51.0%—very much and 34.8%—much), while there is less concern for the other parameters: timeless but also modern (23.5%—much), added value for the production area (20.3%—much), uniqueness (19.4%—much), and a myth behind the cheese (8.4%—much).

The results of the chi-square test presented in Table S3 showed that there were significant differences between consumers' preference for quality Greek semi-hard and hard cheeses in terms of:

1. Importance of information for the selection of Greek semi-hard and hard cheese.

Price: between gender ($x^2 = 10.981$, p = 0.027).

Branding: between age ($x^2 = 37.379$, p = 0.002), level of education ($x^2 = 15.622$, p = 0.048), and job situation ($x^2 = 23.657$, p = 0.023).

Date of Production: between gender ($x^2 = 15.703$, p = 0.003).

Geographical origin: between age ($x^2 = 88.629$, p = 0.000), civil state ($x^2 = 76.495$, p = 0.000), job situation ($x^2 = 51.648$, p = 0.001), and residency ($x^2 = 46.411$, p = 0.000). Quality certificates: between age ($x^2 = 32.008$, p = 0.010), civil state ($x^2 = 25.906$, p = 0.011), and residency ($x^2 = 28.139$, p = 0.030).

2. Importance of organoleptic parameters.

Taste: between gender ($x^2 = 10.687$, p = 0.030).

Aroma: between gender ($x^2 = 21.411$, p = 0.001).

Odor: between gender ($x^2 = 30.228$, p = 0.000) and level of education ($x^2 = 15.554$, p = 0.049).

3. Importance of appearance parameters.

Color: between gender ($x^2 = 16.675$, p = 0.002) and age ($x^2 = 29.091$, p = 0.023). Appearance: between gender ($x^2 = 16.348$, p = 0.003).

Texture: between gender ($x^2 = 32.647$, p = 0.001).

Package appearance: between civil state ($x^2 = 21.279$, p = 0.046).

Size of the package: between civil state ($x^2 = 21.053$, p = 0.050).

4. Importance of sustainable characteristics.

Milk origin: between gender ($x^2 = 10.162$, p = 0.038), age ($x^2 = 28.540$, p = 0.027), civil state ($x^2 = 21.109$, p = 0.049), job situation ($x^2 = 22.528$, p = 0.032), and residency ($x^2 = 35.650$, p = 0.003).

Organic: between civil state ($x^2 = 22.497$, p = 0.032) and residency ($x^2 = 35.436$, p = 0.003).

Nutritional indications: between gender ($x^2 = 10.145$, p = 0.038) and civil state ($x^2 = 25.654$, p = 0.012).

Fat quantity: between age ($x^2 = 27.125$, p = 0.040) and civil state ($x^2 = 24.187$, p = 0.019). Low salt: between gender ($x^2 = 25.565$, p = 0.000) and age ($x^2 = 30.060$, p = 0.018).

5. Importance of general characteristics.

Rational value for money: between level of education ($x^2 = 50.230$, p = 0.000) and civil state ($x^2 = 35.347$, p = 0.000).

Unique and special: between age ($x^2 = 31.799$, p = 0.011).

Added value for the production area: between age ($x^2 = 30.367$, p = 0.016), civil state ($x^2 = 24.264$, p = 0.019), and residency ($x^2 = 34.478$, p = 0.005).

Table 4. Frequencies regarding the preference of choice for quality Greek semi-hard and hard cheese.

How Important Are for You the Following INFORMATION for the Selection of QUALITY GREEK SEMI-HARD AND HARD CHEESE	Not at All	Little	Medium Level	Much	Very Much
The price of the semi-hard and hard cheese	2.4 *	3.2	20.9	37.0	36.5
The branding	11.4	15.7	35.1	27.9	9.9
The date of production	12.9	17.7	24.9	26.5	18.0
The geographical origin	18.1	21.8	29.3	21.0	9.7
The existence of quality certificates such as PDO	11.3	16.0	28.6	29.4	14.7
(Protected Designation of Origin), etc.	11.5	16.0	20.0	29.4	14.7
How important are the following ORGANOLEPTIC PARAMETERS for the selection of QUALITY GREEK SEMI-HARD AND HARD CHEESE	Not at all	Little	Medium Level	Much	Very much
The Taste	0.5	0.6	1.9	21.7	75.3
The aroma	3.3	5.8	25.2	36.7	29.1
The hardness	3.1	8.6	32.4	34.6	21.2
The odor	1.8	4.8	18.2	36.9	38.3
How important are the following APPEARANCE PARAMETERS for the selection of QUALITY GREEK SEMI-HARD AND HARD CHEESE	Not at all	Little	Medium Level	Much	Very much
The color	5.0	11.9	28.7	31.7	22.6
The appearance	4.2	11.2	25.0	35.3	24.3
The texture	2.1	5.8	21.1	39.4	31.5
The package appearance	16.5	24.8	36.0	15.2	7.5
The size of the package (i.e., 200 g, 400 g, 0.5 kg, 1 kg, etc.)	8.0	14.6	33.1	26.5	17.8
How important are the following SUSTAINABLE CHARACTERISTICS for the selection of QUALITY GREEK SEMI-HARD AND HARD CHEESE	Not at all	Little	Medium Level	Much	Very much
Origin of the milk (cow, goat, sheep, or mixture)	4.5	8.3	23.3	34.6	29.3
Organic	18.5	20.9	29.9	21.0	9.6
Nutritional indications	8.2	13.1	27.4	33.3	17.9
Percentage of fats	10.4	16.1	30.3	26.2	17.0
Low salt	19.4	21.4	30.6	17.3	11.2
How important are the following GENERAL					
CHARACTERISTICS for the selection of QUALITY GREEK SEMI-HARD AND HARD CHEESE	Not at all	Little	Medium Level	Much	Very much
Rational value for money	0.9	2.1	11.1	34.8	51.0
Unique and special	10.1	24.2	37.0	19.4	9.4
Added value for the region where it is produced	11.0	23.9	38.5	20.3	6.3
A myth (historical narrative)	33.8	28.1	25.8	8.4	3.9
Timeless but also modern	16.3	17.0	32.5	23.5	10.6

 $^{^{\}ast}$ Values represent %.

Table 5 represents the frequencies concerning the knowledge and preference of the "Ladotyri" cheese in the post-COVID-19 era. Only 42.7% of the participants know the cheese, and the majority of them have never tasted or consumed it (72.2%), while half of them know where it is produced, namely Lesvos (Mytilene) island (49.2%). The participants do not know the cheese's unique characteristics (37.4%), while the rest of them consider its unique flavor as its major characteristic (34.6%), followed by PDO label (32.6%), unique aroma (17.4%), and healthy properties (11.3%). They strongly perceive as an added value the storage of the cheese in olive oil, at 79.7%, as well as the possibility of its production as non-refrigerated cheese, preserved by the oil (65.2%), even though they are not willing to buy and consume such an innovative cheese (57.4%—no answer). In terms of preference with meals with ladotyri, the same order of choice with semi-hard and hard cheeses is recorded: bread and olives (54.9%), meat (33.60%), wine (27.1%), and alone (17.0%). Finally, participants would like to purchase ladotyri from the supermarket (61.2%), and they believe that Lesvos Island is indeed producing quality cheeses (66.1%).

The results of the chi-square test presented in Table S4 showed that there were significant differences between consumers' knowledge and preference for Ladotyri cheese in terms of:

- 1. Knowledge of Ladotyri cheese: between age ($x^2 = 54.305$, p = 0.000), civil state ($x^2 = 34.735$, p = 0.000), job situation ($x^2 = 36.026$, p = 0.000), and residency ($x^2 = 14.772$, p = 0.005).
- 2. Ever tasted Ladotyri: between gender ($x^2 = 9.475$, p = 0.002), age ($x^2 = 60.361$, p = 0.000), civil state ($x^2 = 32.148$, p = 0.001), job situation ($x^2 = 30.697$, p = 0.001), and residency ($x^2 = 12.151$, p = 0.016).
- 3. Knowledge for Ladotyri production area.

Epirus: between age ($x^2 = 10.736$, p = 0.030) and residency ($x^2 = 16.936$, p = 0.002). Samos island: between level of education ($x^2 = 44.796$, p = 0.000), civil state ($x^2 = 10.730$, p = 0.013), and job situation ($x^2 = 10.932$, p = 0.012).

Lesvos island: between age ($x^2 = 19.216$, p = 0.001), civil state ($x^2 = 14.602$, p = 0.002), and residency ($x^2 = 12.384$, p = 0.015).

Lemnos island: between job situation ($x^2 = 10.884$, p = 0.012).

4. Knowledge for Ladotyri's unique characteristics.

Bitter taste: between level of education ($x^2 = 15.796$, p = 0.001), job situation ($x^2 = 8.466$, p = 0.037), and residency ($x^2 = 9.487$, p = 0.050).

Unique aroma: between job situation ($x^2 = 12.638$, p = 0.005).

Unique flavor: between age ($x^2 = 17.054$, p = 0.002).

Low salt: between age ($x^2 = 14.248$, p = 0.007).

PDO product: between age ($x^2 = 17.691$, p = 0.001), civil state ($x^2 = 12.958$, p = 0.005), and job situation ($x^2 = 8.217$, p = 0.042).

Ignorance: between age ($x^2 = 15.244$, p = 0.004) and job situation ($x^2 = 8.659$, p = 0.034).

- 5. Added value for Ladotyri—the fact of olive oil's addition: between age ($x^2 = 12.158$, p = 0.016) and job situation ($x^2 = 9.094$, p = 0.028).
- 6. Added value for Ladotyri—the fact that is a non-refrigerated cheese: between age $(x^2 = 10.673, p = 0.031)$, civil state $(x^2 = 9.570, p = 0.023)$, and job situation $(x^2 = 8.431, p = 0.038)$.
- 7. Preference or intention of purchasing a non-refrigerated cheese: between gender $(x^2 = 8.048, p = 0.005)$ and residency $(x^2 = 12.981, p = 0.011)$.
- 8. Accompaniment meals with Ladotyri.

Meat: between age ($x^2 = 12.595$, p = 0.013).

Fish: between gender ($x^2 = 4.528$, p = 0.033), age ($x^2 = 19.509$, p = 0.001), civil state ($x^2 = 23.785$, p = 0.001), and job situation ($x^2 = 12.013$, p = 0.007).

Wine: between age ($x^2 = 9.521$, p = 0.049), and job situation ($x^2 = 11.455$, p = 0.010). Bread and olives: between gender ($x^2 = 4.483$, p = 0.034) and residency ($x^2 = 13.104$, p = 0.011).

Table 5. Frequencies regarding the knowledge and preference of Ladotyri.

Do You Know the LADOTYRI CHEESE?	Yes	No						
	42.7 *	57.3						
Have you tasted LADOTYRI or are you consuming it occasionally?	Yes	No						
	27.8	72.2						
Where do you think is LADOTYRI produced?	Epirus region	Samos island	Macedonia region	Creta island	Peloponnese region	Lesvos island	Lemnos island	None of the above
	17.9	2.2	1.3	14.3	6.2	49.2	3.9	4.9
Which do you think are the unique characteristics of LADOTYRI?	Bitter taste	Unique aroma	Unique flavor	Low salt	Healthy	POD product	Don't know	
	6	17.4	34.6	8.6	11.3	32.6	37.4	
Do you think it is an added value the OLIVE OIL in which LADOTYRI is inside?	Yes	No						
	79.7	20.3						
Do you think it will be added value if LADOTYRI is a NON-REFRIGERATED GREEK CHEESE preserved by the olive oil it is in?	Yes	No						
	65.2	34.8						
Would you buy/prefer a non-refrigerated CHEESE TODAY, after COVID-19 pandemic?	Yes	No						
_	42.6	57.4						
What would you like to eat with the LADOTYRI CHEESE if you had the chance?	Meat	Fish	Wine	Bread and olives	Fruits	Nuts	Alone	
	33.6	2.5	27.1	54.9	6.5	10.1	17	
Where would you like to purchase LADOTYRI cheese if you had the chance TODAY	From su- permarket	From grocery store	From open market	Via on line				
	61.2	35.5	2.4	1				
Do you believe that LESVOS' Island is producing quality cheeses or not, compared with the rest of Greece	Yes	No						
	66.1	33.9						
	4 7 7 1	. 0′						

^{*} Values represent %.

4. Discussion

In the new era after the COVID-19 pandemic and the current war in Ukraine, the food consumer is emerging with unprecedented perceptions and motives. We investigate in this study the consumer's motives for quality semi-hard and hard cheese, namely Greek cheese, mainly young Greek consumers. As a reference of quality semi-hard and hard cheese, the relatively unknown traditional Greek semi-hard and hard cheese "Ladotyri" was chosen as part of the study for comparison reasons with the rest of Greek semi-hard and hard cheeses [21,22]. The sociodemographic characteristics of the study, presented in

Table 2, exhibited a suitable distribution between the different categories, except the age of the participants, the majority being 18–25 (83.9%) and students (82.6%), for better future prospective and validity of the results obtained.

Participants' choices regarding the places of purchase for semi-hard and hard cheese before and after the COVID-19 pandemic did not change, with the supermarket being by far (more than 90% often and very often) the place of choice, followed by the grocery store (28.8%), with only a minor decrease for the open market (-0.9%) and an increase for online (+1.1%), as shown in Table 3. The results of the chi-square test, shown in Table S2, indicate that there are significant differences, with strong association for the "level of education" regarding purchase online before COVID (V = 0.5) and moderate association after COVID (V = 0.324), with weak to moderate associations varying from V = 0.100 to V = 0.208 for "gender" regarding the supermarket after COVID, "age" regarding online purchase before COVID, "civil state" and "job situation" regarding online purchase before and after COVID, and "residency" regarding purchase from grocery stores, open market, online before and after COVID. Our results indicate that the purchase selection of cheese by the consumers has not changed through the pandemic, since the cross-shopping behavior of consumers for food studied for more than a decade or so [43] provides the supermarket as the first choice, even reaching 76.4% for cheese [44], comparable with our finding of 90% after the pandemic. Another study within the pandemic in Albania also proved the first selection choice of the supermarket for traditional local cheese purchase among educated male and female participants, with lower percentages, however, around 40% [27]. Laguna et al. report a reduction in shopping frequency but no changes in shopping location during the

Regarding the consumption of cheese, participants consume less Greek semi-hard and hard cheese today (-8.4%), mostly 1 kg per month, spending up to EUR 10, eating cheese one or two times per week, with a slight preference for Greek semi-hard and hard cheese (+2.4%) as compared to imported cheese. They prefer the well-known Greek semi-hard and hard cheeses, primarily kasseri, graviera, and as a second choice, kefalotyri and kefalograviera. Most participants consume the cheese at home, mainly during dinner, and only sometimes at a restaurant, with preferred accompaniment meals in the following order: bread and olives, meat, chicken, and wine. The results of the chi-square test, presented in Table S2, indicate that there are significant differences with moderate association only for "level of education" and "civil state" regarding the consumption rate of 4 kg monthly (V = 0.208/0.205), while for most of the sociodemographic variables, the significant differences showed a weak association, varying from V = 0.110 to V = 0.250 for the questions about money spent. Some of the sociodemographic variables exhibited significant differences with weak association, varying from V = 0.077 to V = 211 for the kinds of cheese consumed, with only "residence" with a moderate association (V = 0.384) for kasseri. For the questions of accompaniment meals and place of consumption, some sociodemographic variables show significant differences with weak association, varying from V = 0.092 to V = 0.136. Our findings on the frequency of cheese consumption are in agreement with the reported by Planzer et al. for Brazilian cheeses, reaching 85.4% weekly, 53.8% daily, and 31.8% once per week [44]. The recorded consumption of 1 kg per month for yellow Greek cheese (12 kg annually) appears to be a reasonable and adequate quantity for one kind of cheese only, considering the 18.44 kg average annual consumption per person worldwide in 2020 [46]. Studies on food and cheese pairing are in the framework of diets and health, such as the recent study by Iglesias et al. [47]. Finally, there is no other study comparing cheese consumption before and after the COVID-19 pandemic to evaluate the rest of our findings with reported literature on this subject matter.

Regarding the participants' preference for quality Greek semi-hard and hard cheese in terms of the provided information, price was the most important motive of choice followed by the date of production, the quality certificates, the branding, and the geographic origin (Table 4). The results of the chi-square test, shown in Table S3, indicate that there are significant differences with weak association, varying from V = 0.092 to V = 0.176 for all sociodemographic variables and selected choice parameters.

The participants in terms of organoleptic cheese selections chose by far the taste, followed by the odor, the aroma, and hardness (Table 4), with the chi-square test indicating significant differences with weak association, varying from V = 0.097 to V = 0.191 only for "gender" regarding taste, aroma, and odor and for "level of education" regarding odor, as shown in Table S3.

In terms of the appearance parameters, the order of cheese selection was texture first, followed by appearance, color, size of package, and package appearance (Table 4), with significant differences with weak association (V = 0.093 to V = 0.197) for "gender" regarding color, appearance, texture, "age" regarding color, and "civil state" regarding package appearance and size (Table S3).

In terms of the sustainable characteristics, the order of selection by the participants was origin of milk first, followed by nutritional indications, percentage of fats, organic nature, and low salt (Table 4), with significant differences with weak association (V = 0.092 to V = 0.176) for all sociodemographic variables except "level of education" and selected choice parameters, as shown in Table S3.

Finally, in terms of the general cheese characteristics, the value for money was the first choice, followed by timeless but also modern, added value for the region, uniqueness, and a myth behind the cheese, with significant differences with weak association (V = 0.096 to V = 0.173) for "age" regarding value for money and added regional value, "level of education" regarding value for money, "civil state" regarding value for money and regional added value, and "residency" regarding regional added value. Our results regarding the preference of choice for quality semi-hard and hard cheese indicate that consumers have kept the same motives in the post-COVID-19 era as their motives before the pandemic, since according to the studies before the pandemic, price [48], taste [49,50], texture [51], origin of milk [52], and value for money [53] were major food choice motives for cheeses.

Regarding the participants' knowledge and preference of the Lesvos (Mytilene) "Ladotyri" semi-hard and hard cheese in the post-COVID-19 era, most of them do not know it (57%) and have never tasted or consumed it (72.2%), but they know that the island of origin produces quality cheeses (Table 5). They do not know about its unique characteristics (37.4%), with the flavor believed to be the major asset (34.6%). They consider as added value the immersion of the cheese in olive oil (79.7%) and the possible production as a non-refrigerated cheese (65.2%), even though they would not buy and consume a cheese which is not placed and stored in the refrigerator for themselves (57.4%). Like the rest of the semi-hard and hard cheeses, they prefer to purchase it from supermarket, eat it with bread and olives, followed by meat, and drink it with wine (Table 5). Finally, the majority of participants believe that the island of Lesvos produces quality foods. The results of the chi-square test, presented in Table S4, indicate significant differences with medium to weak association for the sociodemographic variables regarding knowledge and taste of the cheese, with V = 0.106 to V = 2.67, weak associations regarding place of production, unique characteristics, added value, non-refrigerated production and its purchase, and accompaniment meals, varying from V = 0.073 to V = 0.150, as shown in Table S4. The importance of cheese familiarity for the preferred choice motives has also been reported by others with similar results. Nacef et al. report that consumers familiar with the cheese based their hedonic judgment mainly on intrinsic cues (tasting), whereas consumers unfamiliar were more influenced by extrinsic cues [54], with similar result reported for Turkish consumer purchase decisions [55]. Furthermore, Van Loo et al. report that the level of consumer ethnocentrism affects visual attention paid to origin labeling [56]. There are no studies today reporting on consumers' preference for cheeses within olive oil or non-refrigerated cheese preserved with other processes to compare our results.

Overall, our generic findings indicate no significant changes in consumers' preference for quality Greek semi-hard and hard cheese, even in the young generation, in the post-COVID era, as compared with the period before. Consumers' selection criteria, such as motives on purchase of consumption (place of purchase, association with meals, kinds of cheeses, place of consumption) and preferences of choice (such as organoleptic characteris-

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tics, general information, appearance, sustainability, and other characteristics) remain the same today as before. Only the overall consumption has decreased today, which is reasonable considering the economic crisis worldwide, including in Greece. Similar consumer perception for a specific, relatively unknown Greek semi-hard and hard cheese "Ladotyri" is also recorded.

5. Conclusions

P. Kottler, the pioneer in marketing, predicts that the "new" consumer in the new post-COVID-19 era will be "anti-consumer", grouped in five distinctive categories [57], namely the *Climate activists*, the *Degrowth activists*, the *Life simplifiers*, the *Food choosers*, and the Conservation activists. Despite the expected dramatic changes in consumers' perception for food, our study, conducted very recently in Fall 2022, on consumers' preferences for semi-hard and hard cheese indicates that they continue to select, buy, and consume this type of cheese the same way today as compared with the period before the pandemic, with minor changes recorded. The most significant change recorded is the dramatic decrease in cheese consumption, already reaching -8.4%, which may decrease further in the long run due to the foreseen global economic crisis. Concerning cheese purchase, the supermarket is still the source of choice for 90% on a daily (31.8%) or twice weekly basis (38.3%), eating the cheese at home (90.9%) and selecting it primarily based on the price (73.5%). Other selection criteria in order of significance are taste (97%), value for money (85.8%), texture (70.9%), and origin of milk (63.9%). They primarily eat the cheese with bread and olives (57.6%). The study recorded similar consumer motives for a specific Greek type of local traditional hard cheese with a unique formation and stored in olive oil, the Ladotyri Mytilinis cheese, with participants appreciating the olive oil storage (79.7%) and the possible production as a non-refrigerated cheese (65.2%), even though they would not buy it today (57.4%). The survey study focused on youngsters aged 18-25 (83.9%) on purpose to predict the future trends in a more reliable way.

The constraints of the study include the majority of female participants, of Greek nationality only, with the use of Greek cheese only during a period just after the pandemic. The results should be used as a primary roadmap for the future growth and development of the industry of semi-hard and hard cheeses in the new global economic era. Additional research with more questionnaires is required to better clarify the parameters of consumers' motives for quality semi-hard and hard cheese in the "new normality".

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/su15075825/s1, Table S1: Questionnaire consumers' perception for quality semi-hard and hard cheese in the Post COVID-19 era. Table S2: Associations between motives on purchase and consumption of Greek semi-hard and hard cheese and the sociodemographic variables. Table S3: Associations between preference of choice for quality Greek semi-hard and hard cheese and the sociodemographic variables. Table S4: Associations between knowledge and preference of Ladotyri and the sociodemographic variables.

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