

Motivations and barriers to purchasing fish products across age groups in four European countries

Tomasz Kulikowski, Olga Szulecka, Adam Mytlewski

Department of Fisheries Economics, National Marine Fisheries Research Institute, Gdynia, Poland. Corresponding author: T. Kulikowski, tkulikowski@mir.gdynia.pl

https://doi.org/10.67784/4002

Abstract. The purpose of the study is to examine the motivations and barriers influencing seafood purchases among consumers of different age groups in Poland, Italy, Norway, and Ireland. A quantitative survey method is employed, involving population samples from each country. The questionnaire addresses the frequency of fish consumption, motivations for purchase (such as taste and health benefits), key barriers (including price and country of origin), preferences for fish species. The findings demonstrate significant differences in consumer preferences across countries and age groups. It was found that the highest frequency of weekly fish purchases is observed in Italy, where this figure reaches 65.7% among consumers aged 55 and older. In Poland and Italy, the frequency of fish purchases increases with age: in Poland, for example, from 14.5% in the 18-30 age group to 30.9% in the 41-54 age group. The main motivations for purchasing were taste (e.g., 74.7% in the 31-40 age group in Poland) and health benefits (up to 79.2% in the 18-30 age group in Norway), while price (important for 64.2% of respondents aged 18-30 in Norway) and country of origin (important for 63.6% of respondents aged 18-30 in Italy) were the main factors influencing choice. Preferences for types of fish considered healthy also varied: alongside the popular salmon, consumers in some countries preferred traditional and local species such as cod (up to 59.6% in the 31-40 age group in Italy). The findings highlight the complex nature of consumer behaviour in the seafood market, shaped by a unique combination of age-related factors, national traditions, and economic conditions.
Keywords: European countries, fish market, healthy lifestyle, purchasing habits, taste preferences.

Introduction. Seafood constitutes an important source of essential nutrients, including high-quality protein, polyunsaturated omega-3 fatty acids, vitamins, and minerals (Aakre et al., 2019), rendering it a fundamental component of healthy diets across many cultures worldwide (Bakhsh et al., 2023). Growing global attention to healthy lifestyles and sustainable nutrition contributed to increased interest in understanding consumer behaviour regarding seafood products. Research in this area is crucial for the development of effective production, marketing, and policy strategies aimed at meeting consumer needs and ensuring the sustainable use of marine resources. A substantial body of literature already exists within the academic discourse, examining consumer preferences and behaviours in the fish and seafood market. For example, Ding et al. (2022) explored the purchase intentions of Chinese consumers towards traceable seafood, employing an extended theory of planned behaviour. Their findings highlighted the importance of trust and perceived value in shaping consumer intentions to buy traceable seafood. The COVID-19 pandemic had a considerable impact on dietary habits. de la Iglesia et al. (2022) investigated purchasing habits concerning fish and seafood products among the Spanish population during lockdown. Their study indicated changes in purchase channels and types of fish consumed, indicating consumer adaptation to new circumstances. The development of e-commerce also transformed the seafood market. Ma'rifat et al. (2023) examined the influence of perceived risk and benefit on consumer intentions to purchase seafood via e-commerce platforms. Their results emphasised the crucial role of trust and transaction security in attracting consumers to online platforms. Zulkieflimansyah et al., (2022) analysed consumer behaviour related to the purchase of

processed seafood in West Nusa Tenggara province. The study identified product-related factors, pricing, and promotional strategies as substantial influences on consumer decision-making. Adeli et al. (2024) assessed the purchasing behaviour of consumers of canned fish in Tehran (Iran), revealing that brand, price, and nutritional value were key determinants of choice. In addition to purchase intentions, recent studies focused on factors affecting consumer preferences. Nurliza et al. (2021) examined product characteristics, functions, and advantages of seafood in relation to competitive repositioning. Their study stressed the need for producers to emphasise the benefits and quality of their offerings. Carfora and Catellani (2024) explored the impact of environmental messaging on promoting sustainable seafood choices, demonstrating that well-crafted messages may encourage more environmentally responsible behaviour.

The issue of sustainable consumption also occupies a notable position within current research. Almeida et al. (2023) examined seafood consumers' engagement in reducing the environmental impact of packaging, highlighting a willingness among certain consumer segments to support ecological initiatives. Pandey et al. (2024) investigated consumers' willingness to purchase meat and fish products nearing the end of their shelf life, demonstrating that this behaviour is influenced by price and personal beliefs. Galati et al. (2022) conducted a cross-country study on the factors affecting consumer attention to eco-labels on fish during purchase decisions, identifying substantial differences between nations. Regional consumption patterns of seafood similarly attracted academic interest. Colombo et al. (2024) analysed Canadian perceptions and preferences regarding seafood, identifying factors such as availability and cultural influences that affect consumption habits. Murthy et al. (2023) explored consumer attitudes towards fish and seafood in Portugal, focusing on the potential for reducing environmental impact and identifying consumer segments with varying degrees of environmental awareness. Carreras-Simó et al. (2023) examined preferences for local products through the case of traditional coastal fish vendors in Catalonia, Spain, underlining the importance of freshness and trust in local sellers. Technological developments are also shaping consumer behaviour. Kochen (2023) addressed the shift towards sustainable seafood consumption within the broader context of human-ocean interaction, emphasising the need for a comprehensive approach to this challenge. Hoo et al. (2024) analysed the determinants of purchase intentions for plant-based seafood among Generation Z in Malaysia, indicating growing interest in alternative products.

Despite the considerable body of research devoted to fish and seafood consumption across various regions and contexts, further investigation is required into purchasing preferences in different European countries, particularly about age-related differences. The purpose of this study is to examine the frequency of purchase of fish products, the underlying motivations and barriers, buyer preferences, and favoured points of purchase among consumers in Poland, Italy, Norway, and Ireland. The objective is to determine how buyer preferences differ across these four countries and how these variations correspond with different age groups. The findings may contribute to a deeper understanding of the seafood market in the specified countries and support the development of more effective strategies tailored to the needs of diverse buyer segments.

Material and Method. The study includes an empirical component and examines consumer preferences regarding fish products in four European countries: Poland, Italy, Norway, and Ireland. This selection allows for the inclusion of geographically and culturally diverse markets, each characterised by distinct fish consumption traditions (Northern Europe – Norway, Western – Ireland, Southern – Italy, and Central-Eastern – Poland). Primary data were collected as part of the international ProHealth project (Healthy Diet for a Healthy Life, 2025) (innovative processing to preserve positive health effects in pelagic fish products), implemented within the JPI HDHL Joint Action Food Processing for Health. The project focused on developing processing solutions aimed at preserving the nutritional and health-promoting properties of pelagic fish products, while its consumer research component examined factors, with particular attention to health-related values, influencing the purchasing of fish products. Within the project, the

National Marine Fisheries Research Institute (NMFRI) was responsible for questionnaire development, supervision of the consumer survey, data analysis and interpretation of the results.

Data were collected using Computer-Assisted Web Interviewing (CAWI) between 22 September and 5 October 2016. A total of 1,009 interviews were conducted among adult persons responsible for food purchasing in their households, with a minimum of 250 interviews in each of the four countries: Norway, Ireland, Poland and Italy. The panel was selected to be representative in terms of gender and age. Fieldwork was carried out by PBS Sp. z o.o. (Sopot, Poland), a professional research agency. The study strictly complied with all ethical and professional requirements set out in the ICC/ESOMAR International Code on Market, Opinion and Social Research and Data Analytics (ESOMAR & ICC, 2016). Participation in the survey was voluntary and anonymous, and informed consent was obtained from all respondents prior to participation. No directly identifiable personal data were collected at any stage of the study. Due to the anonymous and non-interventional character of the research, formal ethical committee approval was not required.

The collected data were subjected to statistical analysis. The questionnaire consisted of several thematic sections designed to gather information on attitudes towards nutrition and health (5 items); frequency of fish and seafood consumption (11 items); primary motivations for purchasing such products (12 items); key barriers to consumption (11 items); preferences for specific types of fish (11 items); preferred places for purchasing fish products (1 item); and perceptions of the health benefits of different fish species (11 items). An additional section was included to collect socio-demographic data (4 items), including age, gender, and educational attainment. Attitudes towards nutrition and health were assessed using a series of statements to which respondents replied using a 4-point Likert scale.

The first stage of the analysis involved the use of descriptive statistical methods, including the calculation of absolute and relative frequencies for various response categories. This approach provided a general overview of buyer preferences in each country. The second stage comprised a comparative analysis of consumer preferences between countries and across different age groups. Contingency tables were employed to visualise the distribution of responses. Statistical significance of differences between groups and associations between variables was assessed using appropriate statistical methods, including correlation analysis (specifically, the gamma coefficient). A significance threshold of $p < 0.05$ was predominantly adopted, corresponding to a 95% confidence level. The data were processed and analysed using SPSS software, version 23.0. The choice of this software was based on its functionality for conducting statistical analysis of social survey data. The research process adhered strictly to generally accepted ethical standards for studies involving human participants. The materials consisted of completed questionnaires from respondents in Poland, Italy, Norway, and Ireland, along with a dataset compiled from the collected responses**.** To ensure comparability of results across countries, respondents were divided into four standardised age categories: 18-30 years, 31-40 years, 41-54 years and 55 years and older. This classification approach was applied to all four countries (Poland, Italy, Norway and Ireland), allowing for a consistent comparative analysis of the data.

Results

Poland. An analysis of the frequency of purchasing fresh fish and fish fillets in Poland shows a direct correlation between this indicator and the age of respondents. The least active group is young people aged 18-30, where 14.5 % buy fresh fish "once a week or more often." This group also has the highest proportion of those who buy fish only "during special events" (23.6 %). In the 31-40 age group, the proportion of weekly buyers increases to 26.4 %, and 36.3% buy fish at least once a month. At the same time, this group has the highest percentage of those who "never" buy fresh fish – 5.5 %. The highest level of regular purchases is observed among respondents aged 41-54. In this category, 30.9 % buy fish weekly, and 32.4 % – at least once a month. In total,

63.3 % of this group consume fresh fish on a regular basis. Among the oldest age group (55 years and older), the share of weekly buyers is 28.9 %, and 44.7 % of respondents buy fish "at least once a month," which is the highest indicator for this category among all age groups. A detailed breakdown of the responses is provided in Table 1.

Table 1

Frequency of purchasing fresh fish and fish fillets by age group in Poland

Age/Criteria	*Once a week or more often*	*At least once a month*	*Sometimes*	*During special events (e.g., holidays, celebrations)*	*Never*
18 - 30	14.5 %	25.5 %	34.5 %	23.6 %	1.8 %
31 - 40	26.4 %	36.3 %	27.5 %	4.4 %	5.5 %
41 - 54	30.9 %	32.4 %	30.9 %	4.4 %	1.5 %
55 and older	28.9 %	44.7 %	15.8 %	7.9 %	2.6 %

An analysis of motivations for buying fish in Poland reveals that health benefits and taste are decisive factors across all age groups. Health benefits are the key motivation, cited by 69.2 % to 73.7 % of respondents depending on age group, with the highest values in the 18-30 (72.7 %) and 55+ (73.7 %) age groups. Taste is the second most important factor, which is most significant for the 31-40 age group, where it was indicated by 74.7 % of respondents. With age, the importance of fish as a "regular part of the diet" increases significantly: this indicator increases from 25.5 % in the youngest group to 55.9 % in the 41-54 age group. Tradition as a motive has the least weight, although it is most significant for the 18-30 age group, where it was noted by 20 % of respondents, while in the 31-40 and 41-54 age groups this indicator drops to 13.2 %. Complete data are presented in Table 2.

Table 2

Main reasons for buying fish in Poland (by age)

Age/Reason	*It is a regular part of the diet*	*Health*	*Tradition*	*Good taste of fish*
18 - 30	25.5 %	72.7 %	20 %	60 %
31 - 40	35.2 %	69.2 %	13.2 %	74.7 %
41 - 54	55.9 %	70.6 %	13.2 %	70.6 %
55 and older	50 %	73.7 %	18.4 %	65.8 %

When choosing new fish products, Polish consumers are guided by several key factors, the importance of which varies with age. Price is the dominant factor: 61.8 % of respondents aged 18-30 and 63.2 % in the 41-54 age group "often" pay attention to price when buying. The total share of those who consider price "often" or "sometimes" ranges from 88.2% to 90.1 % for consumers under 54 years of age. With age, attention to the country-of-origin increases. While 25.5 % of young people "often" check the origin of fish, this figure is 50 % among the 55+ age group. The total share of those who "never" or "rarely" care about origin is highest among young people (45.5 %) and lowest among the older generation (7.9 %). A proven brand is an important benchmark for middle-aged consumers: 40.7 % in the 31-40 age group and 41.2 % in the 41-54 age group "often" choose fish from well-known producers. For 75.9 % – 79.4 % of respondents aged 31 and older, the brand is "often" or "sometimes" important. Detailed information is provided in Table 3.

Table 3

Key factors (barriers) influencing the purchase of fish by age group in Poland

Factors/Criteria	*Often*	*Sometimes*	*Rarely*	*Never*	*I don't know*
Country of origin of fish					
18 - 30	25.5 %	27.3 %	27.3 %	18.2%	1.8 %
31 - 40	27.5 %	33 %	20.9 %	15.4 %	3.3 %
41 - 54	41.2 %	17.6 %	26.5 %	13.2 %	1.5 %
55 and older	50 %	39.5 %	5.3 %	2.6 %	2.6 %
Verified brand					
18 - 30	32.7 %	43.6 %	10.9 %	10.9 %	1.8 %
31 - 40	40.7 %	35.2 %	17.6 %	4.4 %	2.2 %
41 - 54	41.2 %	38.2 %	16.2 %	4.4 %	0 %
55 and older	34.2 %	44.7 %	18.4 %	2.6 %	0 %
Price					
18 - 30	61.8 %	27.3 %	9.1 %	0 %	1.8 %
31 - 40	53.8 %	36.3 %	4.4 %	3.3 %	2.2 %
41 - 54	63.2 %	25 %	10.3 %	1.5 %	0 %
55 and older	47.4 %	36.8 %	10.5 %	2.6 %	2.6 %

The perception of the health benefits of different types of fish in Poland, are presented in Table 4.

Table 4

Perception of the health benefits of different types of fish in Poland (by age group)

Age/Type of fish	*Salmon*	*Trout*	*Cod and other white fish*	*Herring*	*Sprat*	*Mackerel*	*Tuna*
18 - 30	58.2 %	34.5 %	30.9 %	18.2 %	0 %	20 %	30.9 %
31 - 40	53.8 %	33 %	42.9 %	27.5 %	6.6 %	40.7 %	22 %
41 - 54	41.2 %	29.4 %	54.4 %	29.4 %	8.8 %	35.3 %	16.2 %
55 and older	36.8 %	42.1 %	47.4 %	42.1 %	5.3 %	23.7 %	23.7 %

Salmon dominates the perception of young consumers: 58.2 % of respondents aged 18-30 consider it the most useful. With age, its rating as a "healthy product" decreases to 36.8 % in the 55+ group. On the other hand, trust in traditional types increases with age. The perception of the benefits of herring increases from 18.2 % among young people to 42.1 % among the older generation. A similar trend is observed for cod and other white fish, the benefits of which are most highly evaluated by respondents aged 41-54 (54.4 %). Mackerel is most highly valued in the 31 - 40 age group (40.7 %), while it is least valued among young people (20 %). Trout has a stable rating, which peaks in the 55+ group (42.1 %). Species such as sprat have the lowest usefulness rating, ranging from 0% among young people to 8.8 % in the 41 - 54 age group.

Italy. Italy has the highest frequency of fresh fish purchases among all the countries surveyed, with this indicator steadily increasing with age. Even in the youngest age group (18 - 30 years old), 52.3 % of respondents buy fresh fish "once a week or more often". In the 31 - 40 age group, this figure increases to 57.4 %, and in the 41 - 54 age group to 62.2 %. The frequency of weekly purchases peaks among consumers aged 55 and over, where it stands at 65.7 %. The share of those who buy fish "at least once a month" gradually decreases with age – from 31.8 % in the 18 - 30 age group to 20.9 % in the 55+ age group. This indicates a transition from less regular to weekly purchases as consumers grow older. The percentage of those who never buy fresh fish is minimal in all age groups and does not exceed 2.3 %. Detailed data are presented in Table 5.

Table 5

Frequency of purchasing fresh fish and fish fillets by age group in Italy

Age/Criteria	*Once a week or more often*	*At least once a month*	*Sometimes*	*During special events (e.g., holidays, celebrations)*	*Never*
18 - 30	52.3 %	31.8 %	9.1 %	4.5 %	2.3 %
31 - 40	57.4 %	27.7 %	10.6 %	2.1 %	2.1 %
41 - 54	62.2 %	25.5 %	10.2 %	1 %	1 %
55 and older	65.7 %	20.9 %	7.5 %	4.5 %	1.5 %

In Italy, the main motivations for buying fish are closely linked to food culture and health awareness. Fish is a "regular part of the diet" for a significant part of the population: this was indicated by 61.4 % of young consumers, and this figure rises to 71.6 % in the 55+ age group. Health benefits are the second most important reason, and their importance also increases with age: from 65.9 % in the 18 - 30 age group to 76.1 % in the 55+ age group. The taste of fish is a consistently important motivation for all age groups (from 54.1 % to 64.2 %), while tradition is most often mentioned as a reason by younger age groups (20.5 % in the 18 - 30 age group and 21.3 % in the 31 - 40 age group). These results, shown in Table 6, emphasise that for Italians, fish is not only healthy but also an integral and familiar part of their national cuisine.

Table 6

Main reasons for buying fish in Italy (by age)

Age/Reason	*It is a regular part of the diet*	*Health*	*Tradition*	*Good taste of fish*
18 - 30	61.4 %	65.9 %	20.5 %	63.6 %
31 - 40	59.6 %	68.1 %	21.3 %	61.7 %
41 - 54	64.3 %	71.4 %	12.2 %	54.1 %
55 and older	71.6 %	76.1 %	9 %	64.2 %

When choosing new fish products, Italian consumers are highly demanding in terms of product information. The country of origin is an extremely important factor: 63.6 % of young consumers and 62.7 % of people aged 55+ 'often' pay attention to it. A trusted brand also plays a key role. Its importance as a factor that is 'often' considered is highest in the 55+ group (64.2 %) but remains significant for other age groups (50 % - 51.1 %). Price is the third most important criterion. The share of those who 'often' consider it ranges from 47.7 % in the youngest group to 55.3 % in the 31 - 40 age group. In total, for 81.1 % - 90.1 % of Italian consumers, price is an important factor ("often" or 'sometimes'). The complete structure of responses is presented in Table 7.

Table 7

Key factors (barriers) influencing the purchase of fish by age group in Italy

Factors/Criteria	*Often*	*Sometimes*	*Rarely*	*Never*	*I don't know*
Country of origin of fish					
18 - 30	63.6 %	13.6 %	18.2 %	2.3 %	2.3 %
31 - 40	48.9 %	38.3 %	10.6 %	0 %	2.1 %
41 - 54	55.1 %	38.8 %	3.1 %	3.1 %	0 %
55 and older	62.7 %	25.4 %	10.4 %	1.5 %	0 %
Verified brand					
18 - 30	50 %	27.3 %	22.7 %	0 %	0 %
31 - 40	51.1 %	42.6 %	4.3 %	0 %	2.1 %
41 - 54	50 %	39.8 %	8.2 %	2 %	0 %
55 and older	64.2 %	19.4 %	11.9 %	4.5 %	0 %
Price					
18 - 30	47.7 %	36.4 %	15.9 %	0 %	0 %
31 - 40	55.3 %	34 %	6.4 %	2.1 %	2.1 %
41 - 54	54.1 %	34.7 %	10.2 %	1 %	0 %
55 and older	47.8 %	35.8 %	11.9 %	4.5 %	0 %

Unlike other countries, in Italy, traditional local and white fish species dominate the perception of usefulness, rather than salmon. Cod and other white fish are the leaders in all age groups: they are considered useful by 48 % to 59.6 % of respondents. Herring also has an extremely high rating: 52.3 % in the 18 - 30 age group and 46.3 % in the 55+ age group. Salmon, although popular, is less useful than local species: its rating drops from 47.7 % among young people to 25.4 % among the older generation. Sardines (listed as 'Herring' in the table) and tuna are also highly valued. For example, tuna is considered healthy by 40.9 % of young consumers, and sardines by 31.6 % of respondents aged 41-54. These data are presented in Table 8.

Table 8

Perception of the health benefits of different types of fish in Italy (by age group)

Age/Type of fish	*Salmon*	*Trout*	*Cod and other white fish*	*Herring*	*Sprat*	*Mackerel*	*Tuna*
18 - 30	47.7 %	27.3 %	56.8 %	52.3 %	15.9 %	11.4 %	40.9 %
31 - 40	31.9 %	14.9 %	59.6 %	38.3 %	14.9 %	27.7 %	25.5 %
41 - 54	33.7 %	17.3 %	48 %	42.9 %	31.6 %	34.7 %	35.7 %
55 and older	25.4 %	13.4 %	55.2 %	46.3 %	29.9 %	37.3 %	26.9 %

The perception of the health benefits of different types of fish in Italy (by age group) clearly reflects the deep roots of the Mediterranean diet and the preference for local species in the minds of Italian consumers.

Norway. Analysis of data for Norway confirms that buying fresh fish is an integral part of the consumption culture, although there are certain differences between age groups. The highest frequency of weekly purchases is observed among respondents aged 55 and over – 43.3 %. At the same time, the youngest group (18 - 30 years old) also shows high activity: 32.1 % buy fish 'once a week or more often' and 26.4 % 'at least once a month'. Uniquely, the lowest frequency of regular purchases is recorded in the middle age groups. In the 31 - 40 age group, the share of weekly buyers is 26.2 %, and in the 41 - 54 age group – 23.6 %. These same groups also have the highest percentage of those who 'never' buy fresh fish – 16.7 % and 12.4 %, respectively. This may indicate a temporary decline in fish consumption during periods of active career and child-rearing, or a change in generational habits. A detailed breakdown is presented in Table 9.

Table 9

Frequency of purchasing fresh fish and fish fillets by age group in Norway

Age/Criteria	*Once a week or more often*	*At least once a month*	*Sometimes*	*During special events (e.g., holidays, celebrations)*	*Never*
18 - 30	32.1 %	26.4 %	18.9 %	15.1 %	7.5 %
31 - 40	26.2 %	19 %	23.8 %	14.3 %	16.7 %
41 - 54	23.6 %	29.2 %	28.1 %	6.7 %	12.4 %
55 and older	43.3 %	22.4 %	22.4 %	3 %	9 %

In Norway, the motivational structure has a distinct specificity. Health benefits are the dominant reason for young consumers: 79.2 % of respondents in the 18 - 30 age group and 71.4 % in the 31 - 40 age group indicated this. With age, the importance of this factor decreases slightly, reaching 59.7 % in the 55+ age group. Fish as a "regular part of the diet" is the second most important reason, and its importance increases with age: from 60.4 % among young people to 76.1 % among the older generation. This highlights the deeply rooted habit of fish consumption. The taste of fish, although an important reason, is secondary to health and habit. Taste is most highly valued in the 41 - 54 age group (64 %), while for young people this figure is 49.1 %. Tradition plays a moderate but stable role, peaking at 14.9 % among the oldest group. The data is presented in Table 10.

Table 10

Main reasons for buying fish in Norway (by age)

Age/Reason	*It is a regular part of the diet*	*Health*	*Tradition*	*Good taste of fish*
18 - 30	60.4 %	79.2 %	9.4 %	49.1 %
31 - 40	57.1 %	71.4 %	11.9 %	50 %
41 - 54	60.7 %	56.2 %	5.6 %	64 %
55 and older	76.1 %	59.7 %	14.9 %	59.7 %

Contrary to popular belief, price is a very important factor when choosing fish for Norwegian consumers, especially for young people. 64.2 % of respondents aged 18 - 30 'often' pay attention to price, which is the highest indicator among all factors for this group. For older age groups, this figure remains significant, at 49.3 % for the 55+ group. At the same time, Norwegian consumers pay much less attention to country of origin and brand compared to Italians or Poles. Only 11.3 % of young people and 23.9 % of the older generation 'often' check the country of origin. The brand is even less important: it is 'often' considered by 14.6 % to 26.2 % of respondents. On the other hand, Norway has the highest proportion of those who 'never' pay attention to origin (32.1 % among

young people) and brand (22.6 % among young people). This may indicate a high level of general confidence in the quality of the local market. Detailed data are presented in Table 11.

Table 11

Key factors (barriers) influencing the purchase of fish by age group in Norway

Factors/Criteria	*Often*	*Sometimes*	*Rarely*	*Never*	*I don't know*
Country of origin of fish					
18 - 30	11.3 %	18.9 %	32.1 %	32.1 %	5.7 %
31 - 40	19 %	33.3 %	21.4 %	19 %	7.1 %
41 - 54	14.6 %	32.6 %	25.8 %	24.7 %	2.2 %
55 and older	23.9 %	34.3 %	20.9 %	17.9 %	3 %
Verified brand					
18 - 30	15.1 %	34 %	26.4 %	22.6 %	1.9 %
31 - 40	26.2 %	28.6 %	33.3 %	9.5 %	2.4 %
41 - 54	14.6 %	38.2 %	31.5 %	12.4 %	3.4 %
55 and older	20.9 %	35.8 %	23.9 %	14.9 %	4.5 %
Price					
18 - 30	64.2 %	18.9 %	9.4 %	3.8 %	3.8 %
31 - 40	38.1 %	42.9 %	9.5 %	4.8 %	4.8 %
41 - 54	43.8 %	36 %	13.5 %	4.5 %	2.2 %
55 and older	49.3 %	23.9 %	11.9 %	11.9 %	3 %

In Norway, perceptions of the benefits of different types of fish are balanced and reflect national fishing traditions. Although salmon is one of the leaders, its dominance is not absolute. It is most highly valued in the 31 - 40 age group (47.6 %), while in other groups its rating ranges from 39.6 % to 44.8 %. Cod and other white fish have a consistently high usefulness rating, which is highest among young people (41.5 %). Mackerel shows a significant increase in popularity with age: while 15.1 % of young people consider it useful, this figure reaches 42.9 % in the 31 - 40 age group and 46.3 % in the 55+ age group. A similar trend is characteristic of herring, whose usefulness rating increases from 5.7 % among young people to 34.3 % among the oldest generation. Trout also has stable support, peaking at 35.8 % among the 55+ group. Table 12 shows that Norwegians highly value both salmon and other traditional commercial fish species.

Table 12

Perception of the health benefits of different types of fish in Norway (by age group)

Age/Type of fish	*Salmon*	*Trout*	*Cod and other white fish*	*Herring*	*Sprat*	*Mackerel*	*Tuna*
18 - 30	39.6 %	30.2 %	41.5 %	5.7 %	1.9 %	15.1 %	17 %
31 - 40	47.6 %	33.3 %	40.5 %	9.5 %	4.8 %	42.9 %	14.3 %
41 - 54	40.4 %	16.9 %	34.8 %	14.6 %	2.2 %	38.2 %	19.1 %
55 and older	44.8 %	35.8 %	35.8 %	34.3 %	4.5 %	46.3 %	13.4 %

Ireland. The level of fresh fish purchases in Ireland is moderate but shows a clear upward trend with age. The youngest group (18 - 30 years old) buys fish the least often: although 36.2 % do so 'once a week or more,' this group has the highest proportion of those who 'never' buy fresh fish (18.8 %). In the 31 - 40 and 41 - 54 age groups, the frequency of weekly purchases remains stable (32.6 % and 36 % respectively). In these groups, the proportion of those who buy fish 'at least once a month' is also increasing (26.1 % and 28 % respectively). The most active consumers of fresh fish are respondents aged 55 and over. In this group, 60 % buy fish 'once a week or more', which is the highest rate among all age groups in Ireland. The proportion of those who never buy fish in this category is one of the lowest (8.3 %). Detailed data are presented in Table 13.

Table 13

Frequency of purchasing fresh fish and fish fillets by age group in Ireland

Age/Criteria	*Once a week or more often*	*At least once a month*	*Sometimes*	*During special events (e.g., holidays, celebrations)*	*Never*
18 - 30	36.2 %	20.3 %	20.3 %	4.3 %	18.8 %
31 - 40	32.6 %	26.1 %	26.1 %	8.7 %	6.5 %
41 - 54	36 %	28 %	22.7 %	2.7 %	10.7 %
55 and older	60 %	15 %	15 %	1.7 %	8.3 %

For Irish consumers, taste is the main motivation for buying fish in all age groups without exception. Between 67.4 % and 71 % of respondents cited this factor. Health benefits are the second most important reason, and their importance increases significantly with age: while 23.2 % of young people aged 18 - 30 cite this factor, the figure rises to 48.3 % in the 55+ age group. Fish as a 'regular part of the diet' also becomes a more significant motive in older age groups, increasing from 30.4 % among young people to 51.7 % among people aged 55+. Tradition, unlike in other countries, plays a minor role as a motivator, and its indicators are consistently low in all age groups (10.1 % – 11.7 %). The data is presented in Table 14.

Table 14

Main reasons for buying fish in Ireland (by age)

Age/Reason	*It is a regular part of the diet*	*Health*	*Tradition*	*Good taste of fish*
18 - 30	30.4 %	23.2 %	10.1 %	71 %
31 - 40	32.6 %	34.8 %	10.9 %	67.4 %
41 - 54	48 %	45.3 %	10.7 %	70.7 %
55 and older	51.7 %	48.3 %	11.7 %	70 %

When choosing fish products, Irish people pay attention to several key factors, as shown in detail in Table 15.

Table 15

Key selection factors (barriers) when purchasing fish by age group in Ireland

Factors/Criteria	*Often*	*Sometimes*	*Rarely*	*Never*	*I don't know*
		Country of origin of fish			
18 - 30	24.6 %	29 %	18.8 %	21.7 %	5.8 %
31 - 40	26.1 %	37 %	26.1 %	10.9 %	0 %
41 - 54	20 %	36 %	22.7 %	18.7 %	2.7 %
55 and older	28.3 %	38.3 %	21.7 %	11.7 %	0 %
		Verified brand			
18 - 30	49.3 %	20.3 %	15.9 %	13 %	1.4 %
31 - 40	28.3 %	45.7 %	19.6 %	6.5 %	0 %
41 - 54	30.7 %	45.3 %	12 %	9.3 %	2.7 %
55 and older	46.7 %	35 %	15 %	1.7 %	1.7 %
		Price			
18 - 30	46.4 %	31.9 %	10.1 %	7.2 %	4.3 %
31 - 40	34.8 %	47.8 %	10.9 %	6.5 %	0 %
41 - 54	42.7 %	36 %	5.3 %	10.7 %	5.3 %
55 and older	43.3 %	43.3 %	8.3 %	5 %	0 %

For the youngest group (18 - 30 years old), the most important factor is a trusted brand – 49.3 % 'often' use this criterion. In second place for them is price, which is 'often' considered by 46.4 % of young consumers. In older age groups, the importance of brand and price remains high. For example, in the 55+ group, 46.7 % 'often' choose a proven brand, and 43.3 % consider price. The total share of those who consider price ('often' or 'sometimes') ranges from 78.3 % to 86.6 % in different age groups, which highlights the high price sensitivity of the Irish market. The country of origin has less influence on the choices of Irish consumers. The share of those who 'often' consider this factor ranges from 20 % to 28.3 %. In Ireland, salmon is the undisputed leader in perceived health benefits among all age groups. It is considered beneficial by 58 % of young consumers and 58.3 % of people over 55. Tuna is the second most popular species, especially among young people, where its rating reaches 46.4 %. With age, the perception of tuna's benefits decreases slightly. Cod and mackerel also have consistently high ratings. The popularity of cod is roughly the same across all groups (26.7 %-32 %). The perception of the benefits of mackerel increases with age: from 23.2 % among young people to 45 % among the oldest group. Herring and sprat, unlike in Poland or Norway, are not considered particularly healthy fish species in Ireland. Detailed data are presented in Table 16.

Table 16

Perception of the health benefits of different fish species in Ireland (by age group)

Age/Type of fish	*Salmon*	*Trout*	*Cod and other white fish*	*Herring*	*Sprat*	*Mackerel*	*Tuna*
18 - 30	58 %	15.9 %	30.4 %	4.3 %	10.1 %	23.2 %	46.4 %
31 - 40	47.8 %	10.9 %	30.4 %	2.2 %	10.9 %	23.9 %	34.8 %
41 - 54	42.7 %	20 %	32 %	9.3 %	10.7 %	33.3 %	28 %
55 and older	58.3 %	13.3 %	26.7 %	8.3 %	21.7 %	45 %	23.3 %

Cross-country comparison. A detailed comparative analysis of the frequency of fresh seafood purchases in the four countries studied revealed significant cross-country differences and clear age trends. Italy is the undisputed leader in terms of weekly purchases, with 65.7 % of the older age group (55+) buying seafood every week. Ireland also demonstrates a high level of regular consumption, with 60 % of the older generation buying fish weekly or more often. Poland and Italy are characterised by a pronounced positive correlation between age and purchase frequency, which may indicate an increased focus on healthy eating among older consumers. In contrast, Ireland has the highest proportion of young people (18 - 30 years old) who never buy fresh fish – 18.8 %. The motivational structure of consumers also showed both common features and national characteristics. In all four countries, taste is one of the key drivers of purchase, especially for younger age groups. At the same time, the motivation of 'health benefits' shows a steady increase in importance with age, reflecting an increase in consumer awareness. Statistical analysis confirmed a significant ($p < 0.05$) positive relationship between the frequency of fresh fish purchases and motivations related to taste (correlation coefficient gamma = 0.26) and the habit of including fish in the diet (gamma = 0.24). The strongest factor correlating with consumption frequency is health-related motivations (gamma = 0.39, $p < 0.05$). The role of tradition as a motivational factor is particularly noticeable in Italy and Poland, where it is most often noted by young consumers (21.3 % and 20 %, respectively), indicating the influence of family and cultural attitudes.

An analysis of key selection factors (barriers) when purchasing reveals significant differences in consumer priorities. High price is a critical factor for young people in Poland and Norway, where 61.8 % and 64.2 % of respondents aged 18 - 30, respectively, 'often' pay attention to it. In contrast, in Italy, the dominant factor is the country of origin of the product, which is 'often' considered by 63.6 % of young Italians. In Norway, despite the high price sensitivity of young people, other factors, such as country of origin or brand, are much less important, which may indicate a high level of trust in the market. Preferences regarding the types of fish considered most beneficial also show clear national differences. Although salmon is a popular choice in many countries, its dominance is not absolute. In Poland, there is a significant increase in demand among older generations for cod and other white fish, which are considered the most beneficial by 54.4 % of respondents aged 41 - 54. In Italy, alongside salmon, cod (56.8 % among young people) and traditional Mediterranean fish species are more highly valued. Norway shows a preference for mackerel (46.3 % among the 55+ group) and cod (41.5 % among young people). In Ireland, the popularity of salmon is complemented by significant demand for mackerel, especially among the older generation (45 %), and tuna among young people (46.4 %).

Thus, a summary analysis confirms that consumer preferences in the fish market are shaped by a complex combination of cultural, economic and historical factors. The high frequency of purchases in Italy and Ireland among older groups indicates deeply rooted food traditions. The clear generational gap in Poland reflects dynamic changes in consumer habits. Norway, with the lowest frequency of weekly purchases among middle-aged groups (23.6 % for 41 – 54-year-olds), demonstrates a unique consumption

pattern. Taste remains a universal motivation, but with age it is replaced by health awareness. Analysis of barriers shows that price is a key deterrent for young people in Poland and Norway, while Italian consumers prioritise origin. Preferences for fish species indicate that, alongside global trends (the popularity of salmon), there is a strong attachment to local and traditional species due to their availability, cultural significance and established perceptions of their nutritional value.

Discussion. The examination of purchasing preferences for fish products in Poland, Italy, Norway, and Ireland demonstrated trends and variations across countries and age groups. Purchase frequency showed significant differences: the highest rates were observed in Italy and Ireland, while Poland and Italy saw an increase in consumption with age. Purchase motivations varied, although taste and health benefits were key factors in all countries. The main factors influencing purchase decisions included price, which is particularly important for young people in several countries, as well as country of origin and trusted brand, the importance of which varies significantly between markets. Preferences for specific fish species also differed, although salmon remained popular across all countries. Comparing these findings with existing research yielded confirmations and new insights. For instance, Carlucci et al. (2015) similarly emphasised the complexity of consumer behaviour regarding fish products and the need to account for cross-national differences. Their analysis of international studies identified comparable patterns in the influence of cultural, economic, and social factors on fish consumption, aligning with the observed distinctions between Norway, Poland, Italy, and Ireland.

Pieniak et al. (2010) highlighted the importance of health knowledge and consumer beliefs as determinants of fish consumption. The present study also uncovered that health benefits were a primary motivation for purchasing fish, particularly among older age groups. This supports Pieniak et al. (2010) argument that educating consumers about the health advantages of fish may encourage greater consumption. Marinac Pupavac et al. (2022), focusing on Croatia, explored motivations and barriers influencing fish consumption in a Mediterranean context. Comparing Italian data with Marinac Pupavac et al. (2022) findings displayed parallel cultural influences on dietary habits, notably the enduring preference for traditional fish species in Mediterranean contexts. The systematic review by Govzman et al. (2021) provided a broader perspective on factors shaping seafood consumption. Their review encompassed a wide range of determinants, including socioeconomic factors, personal preferences, accessibility, and environmental considerations. Aligning the present study with Govzman et al. (2021) conclusions contextualised the results within the wider framework of seafood consumption determinants. Murillo et al. (2023), though focused on a specific aspect (willingness to consume seafood by-products), offered insights into general consumer attitudes toward seafood and openness to innovation in this sector. This is consistent with the results of this study, which show that consumer choices are not limited to traditional types of fish. For example, the high popularity of salmon in Poland and Ireland, as well as the significant interest in tuna among young Italians, indicate a willingness to include global, rather than only historically local, seafood species in the diet, confirming the thesis of openness to less traditional offerings.

Winson et al. (2022) examined the impact of eco-labelling on sustainable seafood consumption in Canada. The results of this study show that interest in product origin, which is linked to the idea of sustainable choice, varies significantly between countries. For example, in Italy, there is an extremely high level of attention to the country of origin (63.6 % of young people 'often' check this attribute), which is consistent with the thesis of Winson et al. (2022) about the growing interest in sustainable origin. In contrast, these factors are much less important to consumers in Norway, where only 11.3 % of young people 'often' consider origin. Sacchettini et al. (2021) research specifically addressed Italy, one of the countries under study. Their analysis of Italian consumers' attitudes toward health and sustainable seafood consumption corresponds with the Italian results in the present study, particularly regarding motivations and barriers. Saidi et al. (2022) provided further relevant insights through focusing on Mediterranean countries, including Italy. Their investigation of drivers behind fish selection confirmed

Italian consumers' preference for specific fish species, mirroring this study. Costa et al. (2024) explored seafood selection at Swedish retail outlets. Their conclusions about purchasing decision factors resonate with the barrier-related findings across countries in this study. Hyland et al. (2024) investigated sustainable and healthy food consumption patterns across Europe, including short supply chain products. The conclusions of these authors are consistent with the results of this study, which demonstrate the high importance for consumers of such product attributes as country of origin and trusted brand.

Tunca et al. (2024) focused on European consumer attitudes toward sustainable aquaculture. This represents a considerable aspect of the seafood market, with their findings on consumer preferences for fish species aligning with the present study. Notably, farmed species such as salmon demonstrated consistent popularity across all surveyed countries. Carreras-Simó et al. (2023), who studied preferences for local fish products in Spain, find confirmation in the results of this study. Interest in local products is consistent with Italian consumers' high attention to the country of origin, which 63.6 % of young respondents indicated as a factor that is often checked. Young et al. (2022), while specifically examining seaweed consumption among younger demographics, provided valuable insights into factors influencing non-traditional seafood consumption. The present study confirms their observation of significantly lower fish consumption among 18 - 30-year-olds compared to older age groups, primarily attributable to financial constraints among younger consumers. Petereit et al. (2022) emphasised the influence of food culture and scientific knowledge on seafood consumption behaviour. These findings reinforce the importance of national context when analysing the present study and help explain the variations observed between Poland, Italy, Norway and Ireland. Bouchard et al. (2021) examined attitudes towards aquaculture and seafood purchasing preferences in the United States. While the geographical context differs, their conclusions regarding factors influencing seafood selection mirror this study on preferences and barriers.

In summary, the study demonstrated variations in fish product preferences between Poland, Italy, Norway, and Ireland, along with distinct differences across age groups. These results align with conclusions from other researchers (Carlucci et al., 2015; Pieniak et al., 2010; Marinac Pupavac et al., 2022; Govzman et al., 2021; Murillo et al., 2023; Winson et al., 2022; Sacchettini et al., 2021; Saidi et al., 2022; Costa et al., 2024; Hyland et al., 2024; Tunca et al., 2024; Carreras-Simó et al., 2023; Young et al., 2022; Petereit et al., 2022; Bouchard et al., 2021), who similarly highlight the complexity of consumer behaviour in this sector and the necessity of considering cultural, economic, social, and individual factors. The study contributes new data to existing literature by providing a comparative analysis of four European countries and illuminating age-related differences in consumption patterns, motivations, barriers, and fish product preferences. The results prove valuable for formulating marketing strategies and food policies that encourage fish consumption as an essential element of healthy diets. The comparative analysis with existing literature confirms the relevance of these results, demonstrating consistency with global consumption trends while simultaneously underscoring the crucial importance of accounting for specific national contexts and dynamic age-related characteristics when analysing complex consumer behaviour in the seafood market. The following section presents the conclusions of the study.

Conclusions. The study revealed significant differences in motivations and factors influencing the purchase of fish products among consumers of different age groups in Poland, Italy, Norway and Ireland. It was found that the frequency of fish purchases varies significantly between countries. The highest weekly consumption rates were recorded in Italy and Ireland, where among the older age group (55+) this figure reaches 65.7 % and 60 % respectively. This indicates a strong tradition of regular fish consumption. In contrast, in Poland and Norway, similar indicators are lower (28.9 % and 43.3 % respectively), which indicates a different structure of consumer habits. The key motives for purchasing fish products were taste and awareness of their health benefits. While taste is particularly important for young consumers, especially in Ireland (71 % in the 18 - 30 age group), the importance of health as a motivation increases with age in all

countries, peaking in Italy (76.1 % in the 55+ age group). This highlights the importance of differentiated communication on the part of manufacturers and retail chains. The analysis also showed that habit is one of the most influential factors correlating with purchase frequency, emphasising the importance of forming sustainable consumer patterns.

An analysis of selection factors (barriers) revealed different economic and cultural priorities. Price is the dominant barrier for young people in Norway (64.2 % 'often' consider it) and Poland (61.8 %). In contrast, for young Italians, the key criterion is the country of origin (63.6 %), which indicates a high level of consumer patriotism and trust in local producers. In Ireland, both brand (49.3 %) and price (46.4 %) are equally important to young people. Preferences regarding the types of fish considered healthy also vary significantly. Although salmon is popular in Poland and Ireland, its perception as the healthiest product is not universal. In Italy and Norway, it is surpassed by herring, which is considered the healthiest by 56.8 % of young Italians and 41.5 % of young Norwegians. This indicates that national preferences and the availability of local fish species play a decisive role. For example, the high demand for mackerel among the older generation in Norway (46.3 %) and herring in Poland (42.1 %) reflects deeply rooted eating habits. Understanding specific preferences for fish species allows producers to optimise their product range: for example, promoting the benefits of cod will find potential buyers in Norway and Italy, and mackerel in Ireland and Norway.

A limitation of the study is its nature, which does not allow tracking the dynamics of consumer preferences over time. Further research could focus on studying changes in consumer behaviour regarding fish products over a long period of time, as well as analysing the impact of other factors, such as environmental awareness and eating habits, on consumer choices. In addition, further research is needed to gain a deeper understanding of the motivations and barriers that influence consumer decisions, as well as to study the impact of socio-economic factors, income levels and education on fish consumption.

Authors Contributions. Conceptualization: TK. Methodology: TK, AM. Formal Analysis: TK, OS. Investigation: TK, OS. Data Curation: TK. Writing: TK, OS. Original Draft: TK, OS. Writing – Review & Editing: TK, OS, AM. Supervision: AM.

Conflict of Interest. The authors declare that there is no conflict of interest.

Data Availability. The raw data supporting the findings of this study are available in Microsoft Excel format from the corresponding author upon reasonable request.

Funding. The research conducted by the National Marine Fisheries Research Institute within the ProHealth project (Innovative processing to preserve positive health effects in pelagic fish products) was financed by the National Centre for Research and Development (NCBR), Poland, under the JPI HDHL Joint Action Food Processing for Health, agreement no. JPI HDHL FP4H/ProHealth/02/2016.

References

Aakre, I., Næss, S., Kjellevold, M., Markhus, M., Alvheim, A., Dalane, J., Kielland, E., & Dahl, L. (2019). New data on nutrient composition in large selection of commercially available seafood products and its impact on micronutrient intake. *Food & Nutrition Research*, *63*, Article 3573. https://doi.org/10.29219/fnr.v63.3573

Adeli, A., Mohajer, M., & Hedayati, A. (2024). Evaluation of purchasing behaviour of canned-fish consumers (Case study: Tehran City, Iran). *Caspian Journal of Environmental Sciences*, 1–8. https://doi.org/10.22124/cjes.2024.8060

Almeida, C., Laso, J., de Sousa, D. B., Cooney, R., Quinteiro, P., Rowan, N., Dias, A. C., Clifford, E., Reboredo, R. G., Margallo, M., Nunes, M. L. & Marques, A. (2023). Seafood consumers engagement in reducing environmental impacts from

packaging. Science of the Total Environment, 863, Article 160846. https://doi.org/10.1016/j.scitotenv.2022.160846
Bakhsh, M., Ghazali, M., Yar, M., Channo, A., Kashif, M., Ijaz, M., Subhan, A., Randhawa, N., Waqar, Z., Shehzad, A., & Kaka, S. (2023). The role of fish in global food and nutrition security: current aspects and future prospect. *University of Sindh Journal of Animal Sciences (USJAS)*, *7*(4), 23-35. https://doi.org/10.57038/usjas.v7i04.6643
Bouchard, D., Camire, M. E., Davis, C., Shaler, G., Dumont, R., Bernier, R., & Labbe, R. (2021). Attitudes toward aquaculture and seafood purchasing preferences: Evidence from a consumer survey of Atlantic States. *Aquaculture Economics & Management*, *25*(4), 411–429. https://doi.org/10.1080/13657305.2020.1869859
Carfora, V., & Catellani, P. (2024). Environmental messages to promote sustainable seafood choices: An exploratory mobile app intervention. *Journal of Environmental Psychology*, *94*, 102255. https://doi.org/10.1016/j.jenvp.2024.102255
Carlucci, D., Nocella, G., Devitiis, B., Viscecchia, R., Bimbo, F., & Nardone, G. (2015). Consumer purchasing behaviour towards fish and seafood products: Patterns and insights from a sample of international studies. *Appetite*, *84*, 212–227. https://doi.org/10.1016/j.appet.2014.10.008
Carreras-Simó, M., Codinach-Segura, S., Filimon, N., & Fusté-Forné, F. (2023). Exploring consumer preferences for local food: The case of traditional coastal fishmongers in Costa Brava (Catalonia, Spain). *Journal of Agriculture and Food Research*, *11*, Article 100527. https://doi.org/10.1016/j.jafr.2023.100527
Colombo, S., Manríquez-Hernández, J. A., Music, J., & Charlebois, S. (2024). Canadians' opinions and preferences regarding seafood, and the factors that contribute to their consumption and purchasing habits. *Sustainability*, *16*(3), Article 1111. https://doi.org/10.3390/su16031111
Costa, E., Bergman, P., Niimi, J., & Collier, E. S. (2024). Exploring seafood choices at the point of purchase among a sample of Swedish consumers. *British Food Journal*, *126*(13), 269–285. https://doi.org/10.1108/BFJ-08-2023-0702
de la Iglesia, R., García-González, Á., Achón, M., Varela-Moreiras, G., & Alonso Aperte, E. (2022). Fish, seafood, and fish products purchasing habits in the Spanish population during COVID-19 lockdown. *International Journal of Environmental Research and Public Health*, *19*(18), 11624. https://doi.org/10.3390/ijerph191811624
Ding, L., Liu, M., Yang, Y., & Ma, W. (2022). Understanding Chinese consumers' purchase intention towards traceable seafood using an extended Theory of Planned Behavior model. *Marine Policy*, *137*, Article 104973. https://doi.org/10.1016/j.marpol.2022.104973
Galati, A., Miret-Pastor, L., Siggia, D., Crescimanno, M., & Fiore, M. (2022). Determinants affecting consumers' attention to fish eco-labels in purchase decisions: A cross-country study. *British Food Journal*, *124*(10), 2993–3013. https://doi.org/10.1108/BFJ-05-2021-0498
Govzman, S., Looby, S., Wang, X., Butler, F., Gibney, E. R., & Timon, C. M. (2021). A systematic review of the determinants of seafood consumption. *British Journal of Nutrition*, *126*(1), 66–80. https://doi.org/10.1017/s0007114520003773
Hoo, W. C., Madhavedi, S., Yi, T. C., Hossain, S. F. A., & Prompanyo, M. (2024). Determinants of purchase intention in plant-based seafood products among Generation Z in Malaysia. *Journal of Ecohumanism*, *3*(4), 3144–3158. https://doi.org/10.62754/joe.v3i4.3833
Hyland, J., Henchion, M. M., Olomo, O., Attard, J., & Gaffey, J. (2024). Sustainable and healthy food consumption in Europe: An analysis of consumer purchase patterns, motivations and barriers towards foods from SFSCs. *British Food Journal*, *126*(4), 1429–1455. https://doi.org/10.1108/BFJ-01-2023-0058
Kochen, M. (2023). The move to sustainable seafood. In F. Obaidullah (Ed.), *The ocean and us* (p. 101–110). Springer International Publishing. https://doi.org/10.1007/978-3-031-10812-9_10

Ma'rifat, T. N., Setijawati, D., Wardani, N. H., & Rahmawan, A. (2023). Traditional seafood product purchase through e-commerce: The impact of perceived risk and benefit to consumers' intention to buy. *Future of Food: Journal on Food, Agriculture and Society*, *11*(3), 617. https://doi.org/10.17170/kobra-202210056947

Marinac Pupavac, S., Kenđel Jovanović, G., Linšak, Ž., Glad, M., Traven, L., & Pavičić Žeželj, S. (2022). The influence on fish and seafood consumption, and the attitudes and reasons for its consumption in the Croatian population. *Frontiers in Sustainable Food Systems*, *6*, 945186. https://doi.org/10.3389/fsufs.2022.945186

Murillo, S., Ardoin, R., & Prinyawiwatkul, W. (2023). Factors influencing consumers' willingness-to-try seafood byproducts. *Foods*, *12*(6), 1313. https://doi.org/10.3390/foods12061313

Murthy, A., Galli, A., Madeira, C., & Moreno Pires, S. (2023). Consumer attitudes towards fish and seafood in Portugal: Opportunities for footprint reduction. *Sustainability*, *15*(2), Article 1363. https://doi.org/10.3390/su15021363

Nurliza, N., Suharyani, A., & Nugraha, A. (2021). The product features, functions, and benefits of seafood products for competitive repositioning. *AGRARIS: Journal of Agribusiness and Rural Development Research*, *7*(1), 91–110. https://doi.org/10.18196/agraris.v7i1.10571

Pandey, S., Bohl, A., Favari, V., Mora, P., Phuyal, S., Sojková, E., Budhathoki, M., & Thomsen, M. (2024). Consumers' willingness to buy meat and seafood products close to the expiry date: An exploratory study from Denmark. *Frontiers in Nutrition*, *11*, 1371634. https://doi.org/10.3389/fnut.2024.1371634

Petereit, J., Hoerterer, C., & Krause, G. (2022). Country-specific food culture and scientific knowledge transfer events: Do they influence the purchasing behaviour of seafood products? *Aquaculture*, 560, 738590. https://doi.org/10.1016/j.aquaculture.2022.738590

Pieniak, Z., Verbeke, W., & Scholderer, J. (2010). Health-related beliefs and consumer knowledge as determinants of fish consumption. *Journal of Human Nutrition and Dietetics*, *23*(5), 480-488. https://doi.org/10.1111/j.1365-277x.2010.01045.x

Sacchettini, G., Castellini, G., Graffigna, G., Hung, Y., Lambri, M., Marques, A., Perrella, F., Savarese, M., Verbeke, W. & Capri, E. (2021). Assessing consumers' attitudes, expectations and intentions towards health and sustainability regarding seafood consumption in Italy. *Science of The Total Environment*, *789*, 148049. https://doi.org/10.1016/j.scitotenv.2021.148049

Saidi, A., Sacchi, G., Cavallo, C., Cicia, G., Di Monaco, R., Puleo, S., & Del Giudice, T. (2022). Drivers of fish choice: an exploratory analysis in Mediterranean countries. *Agricultural and Food Economics*, *10*(1), 29. https://doi.org/10.1186/s40100-022-00237-4

Tunca, S., Budhathoki, M., & Brunsø, K. (2024). European consumers' intention to buy sustainable aquaculture products: An exploratory study. *Sustainable Production and Consumption*, *50*, 20–34. https://doi.org/10.1016/j.spc.2024.07.021

Winson, A., Choi, J. Y., Hunter, D., & Ramsundar, C. (2022). Ecolabeled seafood and sustainable consumption in the Canadian context: issues and insights from a survey of seafood consumers. *Maritime Studies*, *21*, 99-113. https://doi.org/10.1007/s40152-021-00245-y

Young, M., Paul, N., Birch, D., & Swanepoel, L. (2022). Factors influencing the consumption of seaweed amongst young adults. *Foods*, *11*(19), 3052. https://doi.org/10.3390/foods11193052

Zulkieflimansyah, Nurjihadi, M., Mandasari, J., Tryana, A. L., & Aprirachman, R. (2022). Consumer behavior towards purchase intention of seafood processed products in the province of West Nusa Tenggara. *International Journal of Scientific Research and Management*, *10*(01), 2864–2870. https://doi.org/10.18535/ijsrm/v10i1.em4

*** ESOMAR, & International Chamber of Commerce (ICC). (2016). ICC/ESOMAR international code on market, opinion and social research and data analytics. https://esomar.org/icc-esomar-code-of-conduct

*** Healthy Diet for a Healthy Life. (2025). *ProHealth*. Retrieved April 11, 2025, from https://www.healthydietforhealthylife.eu/project/prohealth

Received: 03 February 2026. Accepted: 23 April 2026. Published online: 30 October 2026.
Authors:
Tomasz Kulikowski (TK), Department of Fisheries Economics, National Marine Fisheries Research Institute, Kollataja 1, 81-332 Gdynia, Poland, e-mail: tkulikowski@mir.gdynia.pl https://orcid.org/0000-0002-7798-3346
Olga Szulecka (OS), Department of Fisheries Economics, National Marine Fisheries Research Institute, Kollataja 1, 81-332 Gdynia, Poland, e-mail: oszulecka@mir.gdynia.pl https://orcid.org/0000-0001-9889-6703
Adam Mytlewski (AM), Department of Fisheries Economics, National Marine Fisheries Research Institute, Kollataja 1, 81-332 Gdynia, Poland, e-mail:amytlewski@mir.gdynia.pl https://orcid.org/0000-0001-6671-9913
This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.
How to cite this article:
Kulikowski, T., Szulecka, O. & Mytlewski, A. (2026). Motivations and barriers to purchasing fish products across age groups in four European countries. *Aquaculture, Aquarium, Conservation & Legislation*, *19*(5), 2600-2617. https://doi.org/10.67784/4002