

Factors Influencing the Increase in Consumption of Unprocessed and Minimally Processed Plant-Based Foods: An Empirical Research in Poland*

Wioletta WRÓBLEWSKA and Anna GOLISZEK

University of Life Sciences in Lublin, Poland

Correspondence should be addressed to: Wioletta WRÓBLEWSKA, wioletta.wroblewska@up.edu.pl

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Abstract

The market for minimally processed foods in Poland is relatively unknown. The reason for addressing this topic is the need to understand the motives that could drive increased consumption of packaged plant-based UMPFs among individual buyers in Poland, which is essential for businesses seeking to adapt products to consumer needs. This article aimed to identify the factors driving the growth in consumption of plant-based unprocessed and minimally processed foods (UMPF) by individual buyers in Poland, taking into account their gender and age, and to segment these motives for the total number of respondents and for categories of respondents separated by gender and age. The study was conducted using CATI with a sample of 875 people. The collected raw data were subjected to quantitative analyses, including comparative analysis, mean score analysis, Pearson's chi-square test of independence, Phi coefficient analysis, nonparametric Mann-Whitney U test results, and exploratory factor analysis. The factors that most increase consumption of this food category in Poland are lower prices, higher taste qualities, expanding the product range to include organic products, health benefits, a wider range, improved packaging functionality, extended shelf life, and higher income. Lower price was the most important factor driving consumption. Significant differences were observed by gender and age in the assessment of the importance of motivators for increasing UMPF consumption. The study identified five segments of potential consumers based on their assessment of specific factors and their level of UMPF consumption. These findings may prove useful to manufacturers and distributors of such products, enabling them, among other things, to tailor their offerings to the needs of various market segments.

Keywords: unprocessed and minimally processed foods; plant-derived foods; consumption, growth factors, Poland

Introduction

In recent years, there has been a noticeable increase in researchers' interest in consumer attitudes, motives, and behaviours across various markets, considering the impact of economic, social, demographic, cultural, and food-related changes that societies are undergoing. The literature cites health, convenience, and socio-economic trends as the key factors influencing the increase in the UMPF consumption. Consumers are increasingly looking for foods that are perceived as fresh, natural, and rich in vitamins, minerals, fibre, and antioxidants, associating them with better health and a lower risk of chronic diseases (De Oliveira et al., 2012; Giannakourou and Tsironi, 2021; Ete and Jayarajan, 2024; Ponte et al., 2025). For example, the findings of Diez et al. (2025) confirm the importance of food policies that encourage UMPF consumption in cancer prevention (Obesity-Related Cancers), and UMPF consumption correlates with better cognitive function in older adults (da Silva et al. 2022). Public health strategies increasingly recommend prioritising UMPF to improve population health (Costa et al., 2023; Chang et al., 2024).

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Unfortunately, many countries are seeing an increase in ultra-processed food consumption (Wolfson et al., 2024), driven by the food industry's profit motive. However, the desire to stay healthy amid a busy urban lifestyle and the need to save time on meal preparation make UMPF's ready-to-eat meals an attractive option. According to Giannakourou and Tsironi (2021), Ete and Jayarajan (2024), and Chang et al. (2025), UMPFs offer convenience without sacrificing perceived health benefits, meeting the demand for products that are easy to prepare, safe, and high-quality. Higher income and education levels, as well as greater purchasing power, are also associated with increased consumption of MPFs, as these groups can afford healthier products and prioritise them. Lower income and education levels are associated with reduced consumption (Gomes et al., 2020; Marques et al., 2022). Taste and sensory qualities are important for consumer acceptance (Wróblewska and Goliszek, 2025). Societies are also placing increasing importance on sustainable production practices, and some consumers choose MPFs for environmental or ethical reasons (Ponte et al., 2025). The goal of effective implementation and execution of public health strategies, which increasingly recommend prioritising unprocessed and minimally processed foods to improve population health (Costa et al. 2023; Chang et al. 2024), is to understand the motives for purchasing and the motives for potential growth in consumption of UMPF.

Material and research methods

The study was conducted as part of the TANGO project "Probiotic bacteria as a tool for extending the shelf life and maintaining the consumer quality of minimally processed food" at the University of Life Sciences in Lublin. To achieve the article's objectives, part of the empirical research on the UMPF market in Poland used the CATI survey method. Primary data were collected by an external contractor, i.e., the BIOSTAT Research and Development Centre, based on a survey developed by the researcher. Participants were informed of the need to consent to participate in the study and of the possibility of withdrawing if any questions proved too sensitive. The study used a sample of $n=1000$, but analyses of motives for increased UMPF purchases were based on $n=875$ actual purchasers of this type of food. This criterion was verified using a question included in the survey. A stratified random sample was used, with the province of residence as the stratum. Gender proportions were also taken into account. The analyses considered two independent variables, i.e., the gender and age of the respondents, and three dependent variables, i.e., the declaration of purchasing UMPF, the frequency of purchasing selected UMPF products, and factors potentially increasing UMPF consumption. Women and men accounted for 53% and 47% of the respondents, respectively, and the working-age population (WAP, in Poland, 18-60/65 years) and post-working age population (PWAP, in Poland > 60/65 years) accounted for 81.3% and 18.7%, respectively.

The collected primary data were subjected to quantitative analyses, i.e., comparative analyses, analyses of average results, Pearson's chi-square independence test, Phi coefficient analyses, analyses of the non-parametric Mann-Whitney U test results, and exploratory factor analysis. To examine a statistically significant association between the variables under analysis, the chi-square test was used, and the Phi coefficient was employed to assess the strength of this association (Brzeziński, 2021). The non-parametric Mann-Whitney U test was used to determine statistically significant differences between dependent and independent variables. Exploratory factor analysis was used to reduce the number of observable variables by transforming a set of mutually correlated variables into a new set of mutually uncorrelated variables comparable to the original set. This analysis was used to narrow down the set of variables influencing the research category "motives for purchasing packaged plant-based UMPF products" and to identify internal correlations among these variables. The principal component method was used to distinguish between factors. To determine the number of common factors (so-called principal components) in four analyses (for the entire population (O), women (F), men (M), working-age population (WAP)), the Kaiser criterion method was used, and for the post-working-age population (PWAP), the Cattell cluster criterion method. Kaiser's criterion involves including in the subsequent analysis only factors with eigenvalues greater than 1; the scree criterion includes those factors that lie on the "slope" of the scree plot—that is, to the left of the scree plot—along with the principal component from which the scree plot begins (Panek, 2009). The factors were rotated using the Varimax method. Within each factor, variables with the highest factor loadings in relation to a given coefficient were identified, i.e., variables with values of at least 0.7 (Bedyńska and Cypryńska, 2007). Statistical analysis of the data was performed using IBM SPSS Statistics Ver. 9.0.

Results

The results of the analyses indicate that the declared demand for plant-based UMPF in Poland is high, with 87.5% of the population purchasing this type of food. Taking into account selected demographic characteristics of the Polish population and their relationship with the demand for UMPF, it was observed that there is no statistically significant relationship between the declared demand for this type of food and the gender of the respondents ($\chi^2 = 1.490$, $df = 1$; $p = 0.188$; $\Phi = 0.42$). 88.7% of women and 86.0% of men admitted to purchasing UMPF.

However, a statistically significant relationship was observed between declarations of UMPF purchases and age. The older the age group, the less frequently they purchase UMPF. The strength of the relationship was moderate ($\chi^2 = 142.516$, $df = 1$, $p < 0.01$, $\Phi = 0.393$). The most popular foods of this type are vegetable mixes (78.7%), salad mixes (72.9%), and iceberg lettuce. Less popular are endive (84.4%), lamb's lettuce (59.7%), vegetable sprouts (51.6%), and rocket (49.1%). At least 50% of respondents do not buy these products or buy them only occasionally (Tab. 1).

Table 1: Frequency of UMPF purchases

Product type	Indications %					$\bar{X}$	SD	V	Rank
	1	2	3	4	5				
Vegetable mixes	3,2	18,1	53,5	22,2	3,0	3,04	0,806	0,26513	1
Salad mixes	7,4	19,5	45,5	25,3	2,3	2,96	0,914	0,30878	2
Rocket	20,6	28,9	35,0	13,0	2,4	2,48	1,033	0,41653	4
Lamb's lettuce	28,7	31,0	30,3	8,2	1,7	2,23	1,011	0,45336	6
Endive	69,2	15,2	10,9	3,7	1,0	1,52	0,901	0,59276	7
Iceberg lettuce	5,0	24,5	47,1	20,4	3,0	2,92	0,873	0,29897	3
Vegetable sprouts	24,5	27,1	31,1	13,8	3,4	2,45	1,105	0,45102	5

1 – I do not purchase; 2 – several times a year; 3 – several times a month; 4 – several times a week; 5 – every day or almost every day.

Respondents were presented with a list of 13 motives, identified based on a critical analysis of the literature on the subject, and asked to assess the strength of each motive's influence on purchasing decisions on a 5-point Likert scale, where 1 - definitely not, 2 – rather no, 3 – no opinion, 4 – rather yes, 5 – definitely yes (Tab. 2). The motives analysed as having a potential impact on increasing UMPF consumption are: 1. factors related to the characteristics of the product itself – higher taste qualities, higher health-promoting properties, more attractive product appearance; 2. factors related to the range of UMPF products – expansion of the range of UMPF products, increase in the range of organic UMPF products, extension of the shelf life of UMPF products; 3. marketing factors – lower price, greater packaging functionality, persuasion by friends/family, fashion/consumer trends, promotional campaigns; 4. socio-economic factors of the respondents – higher income, family members' needs.

The results indicate that the arithmetic mean for the analysed motives influencing the increase in UMPF food consumption ranges from 2.65 to 4.15. The first group of motives that strengthen UMPF consumption has an average ranging from 3.66 to 4.15. This group of motives consists of eight variables: lower prices, higher taste qualities, a wider range of organic products, increased health benefits, a wider range of products, greater packaging functionality, extended shelf life, and higher income. More than two-thirds of respondents consider these factors to be of great or very great importance in motivating them to increase their UMPF consumption. Among these, the factor that respondents say contributes most significantly to increased UMPF consumption is a reduction in prices of such products. This is a key factor influencing increased consumption for 4 out of 5 respondents. The second group of factors motivating increased consumption of UMPF, with scores ranging from 3.16 to 3.65, includes: more attractive appearance and promotional campaigns. The third group of motivating factors, with averages ranging from 2.65 to 3.15, included persuasion from friends/family and fashion/trends, which are important to fewer than 2 out of 5 respondents. The coefficient of variation for 12 of the 13 variables is relatively low, ranging from 0.2 to 0.39, indicating little variation around the mean.

Table 2: Potential factors increasing UMPF consumption among consumers

Variables	Indications %					$\bar{X}$	SD	V	Rank
	1	2	3	4	5				
A	0,7	4,5	17,4	53,4	24,0	3,96	0,808	0,20404	2
B	1,6	6,9	18,1	47,0	26,4	3,90	0,924	0,23692	4
C	0,8	8,5	19,3	41,8	29,6	3,91	0,945	0,24168	3
D	1,3	6,4	18,5	49,3	24,5	3,89	0,888	0,22827	5
E	2,4	12,6	23,5	45,4	16,1	3,60	0,979	0,27194	9
F	2,1	10,2	15,0	44,2	28,6	3,87	1,007	0,26020	6
G	3,4	11,9	14,8	43,1	26,8	3,78	1,074	0,28412	7
H	1,7	5,4	11,6	39,2	42,1	4,15	0,941	0,22674	1
I	3,9	10,5	24,8	34,7	26,1	3,69	1,088	0,29485	8

J	1,8	7,1	15,7	51,3	24,1	3,89	0,914	0,23496	5
K	7,3	25,5	25,2	33,5	8,5	3,10	1,101	0,35516	11
L	19,3	32,0	20,3	21,1	7,3	2,65	1,215	0,45849	12
M	9,2	20,4	23,7	35,1	11,7	3,20	1,162	0,36312	10

A – better taste; B – improved health benefits; C – wider range of organic products; D – wider range of products; E – more attractive product appearance; F – greater packaging functionality; G – extended shelf life; H – lower price; I – higher income; J – family members' demand; K – persuasion from friends and/or family; L – fashion/trends in the consumption of this type of food; M – campaigns promoting this type of food.

The non-parametric Mann-Whitney U test, at a significance level of $p \leq 0.05$, showed statistically significant differences between women and men (Tab. 3) and between WAP and PWAP (Tab. 4) in the importance of 5 out of 13 motivators for the declared increase in UMPF consumption. Consequently, the research hypotheses regarding differences by gender and age group, as well as the assessment of the importance of individual motivational factors for increasing UMPF intake, were confirmed in both cases for 5 out of 13 variables.

Table 3: Analysis of the significance of differences in respondents' answers based on gender.

Variables	Gender	Average rank	Summing ranks	U Manna-Whitneya	Asymptotic significance (two-tailed)
A	W	447,82	207789,00	90331,00	0,158
	M	425,82	174586,00		
B	W	445,38	206656,00	91464,00	0,293
	M	428,58	175719,00		
C	W	468,36	217317,50	80802,50	<0,001
	M	402,58	165057,50		
D	W	463,63	215122,50	82997,500	<0,001
	M	407,93	167252,50		
E	W	445,85	206872,50	91247,500	0,270
	M	428,05	175502,50		
F	W	461,84	214293,00	83827,00	0,001
	M	409,96	168082,00		
G	W	438,54	203482,50	94637,500	0,891
	M	436,32	178892,50		
H	W	439,79	204064,00	94056,00	0,758
	M	434,90	178311,00		
I	W	454,75	211002,50	87117,50	0,025
	M	417,98	171372,50		
J	W	455,03	211133,00	86987,00	0,018
	M	417,66	171242,00		
K	W	430,37	199691,50	91811,50	0,357
	M	445,57	182683,50		
L	W	441,47	204842,00	93278,00	0,610
	M	433,01	177533,00		
M	W	446,98	207399,00	90721,00	0,221
	M	426,77	174976,00		

Variables from A to M explanation as in Table 2; W – women, M – men.

Table 4: Analysis of the significance of differences in respondents' answers by age category.

Variables	Age category	Average rank	Summing ranks	U Manna-Whitneya	Asymptotic significance (two-tailed)
A	WAP	436,55	290307,50	68862,50	0,828
	PWAP	440,51	92067,50		
B	WAP	438,97	291917,00	68513,00	0,742
	PWAP	432,81	90458,00		
C	WAP	426,08	283346,00	61901,00	0,012
	PWAP	473,82	99029,00		

D	WAP	438,31	291473,50	68956,50	0,856
	PWAP	434,94	90901,50		
E	WAP	441,16	293369,00	67061,00	0,417
	PWAP	425,87	89006,00		
F	WAP	431,57	286994,50	65549,50	0,188
	PWAP	456,37	95380,50		
G	WAP	451,12	299996,50	60433,50	0,003
	PWAP	394,16	82378,50		
H	WAP	435,66	289711,00	68266,00	0,678
	PWAP	443,37	92664,00		
I	WAP	451,56	300288,00	60142,00	0,002
	PWAP	392,76	82087,00		
J	WAP	452,19	300704,50	59725,50	<0,001
	PWAP	390,77	81670,50		
K	WAP	443,07	294644,50	65785,50	0,227
	PWAP	419,76	87730,50		
L	WAP	454,65	302341,50	58088,50	<0,001
	PWAP	382,94	80033,50		
Ł	WAP	446,39	296852,50	63577,50	0,054
	PWAP	409,20	85522,50		

Variables from A to M explanation as in Table 2; WAP – Working-Age Population, PWAP – Post-Working Age Population

To determine the optimal number of latent variables explaining the correlations between the observed variables “potential motivators driving UMPF consumption,” and to compare the structure of motives among women and men as well as among people of working age and post-working age, exploratory factor analysis was conducted for all respondents, as well as for each of the two groups distinguished by gender and for each of the two groups distinguished by age category. After standardizing the data, Cronbach’s alpha was used to measure the reliability of the research instrument. The list of factors motivating UMPF consumption included 13 observable variables. The Cronbach’s alpha coefficient was 0.824, exceeding the 0.8 threshold. This indicates high reliability of the scale and, consequently, high internal consistency (Bedyńska, Cypryńska, 2007). Next, based on an analysis of the scree plot, four factors were identified for the total sample, for women, men, and for working-age individuals, which, on the line graph, according to Cattell’s criterion, lie above the scree. In each case, these factors account for more than 60% of the total eigenvalue. For the category of people of retirement age, according to Kaiser’s criterion, four factors with eigenvalues greater than 1 were identified, for approximately 60% of the total variance (Tab. 6).

Table 5: Hierarchy of factors according to their eigenvalues determined using a scatter plot (for the overall population, women, and men)

Factor	Own value			Cumulative Own value			% of total own values (variance)			Cumulative % of values		
	O	W	M	O	W	M	O	K	M	O	K	M
1	4,229	3,997	4,495	4,229	3,997	4,495	20,502	18,615	19,850	20,502	18,615	19,850
2	1,557	1,714	1,546	5,786	5,711	6,041	17,214	17,574	16,590	37,716	36,189	36,440
3	1,148	1,185	1,087	6,934	6,896	7,128	11,938	12,271	13,914	49,655	48,460	50,354
4	0,926	0,926	0,945	7,860	7,822	8,073	10,959	11,720	11,745	60,614	60,180	62,100

O – the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy is 0.839, which is greater than 0.7. Bartlett's sphericity test is significant (the variables are statistically significantly correlated); $\chi^2 = 2980.565$; and $p < 0.001$; W – KMO = 0.819; Bartlett's sphericity test is significant; $\chi^2 = 1541.176$; and $p < 0.001$; M - KMO = 0.837; Bartlett's sphericity test is significant; $\chi^2 = 1545.456$; $p < 0.001$.

Table 6: Hierarchy of factors according to their eigenvalues determined using the scree plot for working-age population (WAP) and the Kaiser criterion for post-working age population (PWAP).

Factor	Own value		Cumulative own value		% of total own values (variance)		Cumulative % of values	
	WAP	PWAP	WAP	PWAP	WAP	PWAP	WAP	PWAP
1	4,257	4,213	4,257	4,213	20,778	20,194	20,778	20,194
2	1,757	1,411	6,014	5,624	18,240	15,641	39,018	35,835
3	1,135	1,097	7,149	6,721	11,653	12,701	50,670	48,536
4	0,926	1,032	8,075	7,753	11,442	11,106	62,112	59,641

WAP – KMO = 0.835; Bartlett's sphericity test is significant; $\chi^2 = 2446.584$; and $p < 0.001$; PWAP – KMO = 0.786; Bartlett's sphericity test is significant; $\chi^2 = 720.223$; $p < 0.001$.

For all respondents and for women, the first factor included three variables, for men, it included two variables with eigenvalues greater than 0.7 (Tab.7). For all respondents, these were variables determining motivations resulting from the increased ecological, health and taste values of UMPF, and for the female category, variables related to motivations resulting from marketing activities, i.e., trend creation, word-of-mouth marketing or promotional campaigns. In the men's category, the first factor included variables related to the motivations for the increased ecological and taste qualities of UMPF. The second factor for all respondents and men includes three variables related to motivations resulting from marketing activities, and these factors are identical to the first factor for all respondents. For women, the second factor comprises two variables reflecting motivation stemming from the superior environmental and health benefits of UMPF. The third factor, for all analyzed respondent categories, consists of a single variable: in the general category and for men, this is higher income, while for women, it is demand for UMPF among family members. The fourth factor for each analyzed group also consists of a single variable: for all respondents and for men, this is a longer shelf life of UMPF, and for women, a lower price.

Table 7: Results of factor analysis of potential motives for increasing UMPF consumption (for the overall population (O), women (W), and men (M))

Variables	Factors											
	1			2			3			4		
	O	W	M	O	W	M	O	W	M	O	W	M
Organically produced products	<u>0,744</u>	0,077	<u>0,745</u>	0,136	<u>0,820</u>	0,256	-0,055	-0,114	-0,081	-0,005	0,006	0,105
Enhancing the health-promoting properties of products	<u>0,702</u>	0,137	0,680	0,141	<u>0,714</u>	0,185	0,142	0,245	0,135	0,165	0,162	0,174
Better taste	<u>0,701</u>	0,102	<u>0,705</u>	0,051	0,660	-0,050	0,214	0,292	0,350	0,060	0,022	0,067
Expansion of the product range	0,673	0,024	0,692	0,018	0,604	0,037	0,187	0,243	0,171	0,201	0,230	0,274
More attractive product appearance	0,458	0,416	0,419	0,364	0,373	0,273	0,216	0,449	0,379	0,258	0,133	0,156
Fashion/trends in UMPF consumption	0,041	<u>0,888</u>	0,091	<u>0,872</u>	0,028	<u>0,869</u>	0,031	-0,058	0,049	0,117	0,073	0,114
Persuasion from friends and/or family	0,115	<u>0,754</u>	0,154	<u>0,774</u>	0,052	<u>0,723</u>	0,257	0,241	0,323	-0,087	0,039	- 0,215
Campaigns promoting UMPF food	0,194	<u>0,806</u>	0,182	<u>0,756</u>	0,181	<u>0,741</u>	-0,008	0,048	0,058	0,268	0,059	0,321
Earning a higher income	0,169	0,116	0,099	0,148	0,219	0,199	<u>0,755</u>	0,154	<u>0,723</u>	0,120	0,679	0,160
Lower price	-0,004	0,030	0,029	-0,087	0,039	-0,131	0,637	0,010	0,630	0,530	<u>0,884</u>	0,496
Family members' needs	0,388	0,089	0,406	0,223	0,093	0,227	0,590	<u>0,754</u>	0,652	-0,125	0,032	- 0,043
Longer shelf life	0,171	0,422	0,207	0,214	0,068	0,080	0,069	0,319	0,145	<u>0,807</u>	0,386	<u>0,800</u>

Packaging functionality	0,452	0,061	0,357	0,098	0,253	0,194	0,081	0,648	0,114	0,482	0,152	0,554
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Four groups of factors were also identified for people of WAP and PWAP (Tab. 8). In both cases, the first factor consisted of two variables with eigenvalues greater than 0.7. For people of WAP, the first factor included variables indicating that the motivator potentially increasing UMPF consumption is an increase in the range of UMPF products, including an increase in the range of organic products. In the case of PWAP, the first factor included variables indicating that the motivating factor was the increase in the health and taste qualities of UMPF. The second factor for people of WAP consisted of three variables emphasising the importance of marketing activities, i.e., trend creation, word-of-mouth marketing, and promotional campaigns; for people of PWAP, it consisted of one variable, UMPF promotional campaigns. The third factor in both respondents' categories consisted of one variable; for WAP, it was the extension of the shelf life of UMPF products, and for PWAP, it was the demand for UMPF products among family members. The fourth factor, for persons of WAP and PWAP, consists of two variables - wage increases and a decrease in UMPF prices.

Table 8: Results of factor analysis of potential motives for increasing UMPF consumption (for WAP and PWAP)

Variables	Factors							
	1		2		3		4	
	WAP	PWAP	WAP	PWAP	WAP	PWAP	WAP	PWAP
Organically produced products	<u>0,760</u>	0,657	0,183	0,001	0,054	-0,126	-0,098	0,201
Enhancing the health-promoting properties of products	0,697	<u>0,748</u>	0,155	0,220	0,215	-0,065	0,095	0,177
Better taste	0,667	<u>0,708</u>	0,037	0,139	0,183	0,249	0,185	-0,089
Expansion of the product range	<u>0,714</u>	0,652	-0,013	0,220	0,114	0,237	0,194	0,044
More attractive product appearance	0,407	0,529	0,406	0,251	0,308	0,387	0,224	-0,029
Fashion/trends in UMPF consumption	0,020	0,053	<u>0,879</u>	0,696	0,097	0,290	-0,017	0,194
Persuasion from friends and/or family	0,116	0,062	<u>0,810</u>	0,403	-0,039	0,684	0,159	0,047
Campaigns promoting UMPF food	0,188	0,161	<u>0,766</u>	<u>0,739</u>	0,232	0,179	-0,012	0,091
Earning a higher income	0,224	0,239	0,220	-0,007	0,014	0,211	<u>0,752</u>	<u>0,836</u>
Lower price	0,046	0,042	-0,134	0,440	0,338	0,016	<u>0,733</u>	<u>0,726</u>
Family members' needs	0,518	0,167	0,166	0,023	-0,031	<u>0,817</u>	0,427	0,182
Longer shelf life	0,085	0,308	0,165	0,682	<u>0,836</u>	-0,051	0,176	0,027
Packaging functionality	0,375	0,461	0,097	0,037	<u>0,667</u>	0,256	0,057	0,232

WAP – Working-Age Population, PWAP – Post-Working Age Population

The results of the factor analysis were used to identify consumer segments based on the factor motivating increased consumption of UMPF. Table 9 shows consumer segments in all analysed groups. Five segments of potential consumers can be distinguished, differing in their assessment of individual factors motivating them to increase UMPF consumption, i.e., they make the potential increase in UMPF consumption dependent on:

1. an increase in the health, environmental, and taste qualities of UMPF;
2. marketing activities, trend setting, word-of-mouth marketing, and promotional campaigns;
3. improvement of their financial conditions or reduction of UMPF prices;
4. extension of the shelf life of products
5. the demand for UMPF among family members.

Table 9. Respondent segments identified based on potential motives for increased consumption (for the overall population, women, men, working age, and post-working age)

Groups of respondents	Factor			
	1	2	3	4
O	Organically produced products; Enhanced health benefits of products; Improved taste	Fashion/trends in UMPF consumption; Persuasion from friends and/or family; Campaigns promoting UMPF foods	Earning a higher income	Longer shelf life
W	Fashion/trends in UMPF consumption; Persuasion from friends and/or family; Campaigns promoting UMPF foods	Organically produced products; Enhancing the health-promoting properties of products	Persuasion from friends and/or family	Lower price
M	Organic products Better taste	Fashion/trends in UMPF consumption; Campaigns promoting UMPF foods; Persuasion from friends and/or family	Earning a higher income	Longer shelf life
WAP	Organic products; Expansion of the product range	Fashion/trends in UMPF consumption; Persuasion from friends and/or family; Campaigns promoting UMPF foods	Longer shelf life	Earning a higher income; Lower price
PWAP	Enhancing the health benefits of products; Improved taste	Campaigns promoting UMPF foods	Persuasion from friends and/or family	Earning a higher income; Lower price

O – Overall, W – Women, M – Men, WAP – Working-Age Population, PWAP – Post-Working Age Population

Discussion

According to Rai et al. (2023), the main factor influencing food marketing remains consumer perception of products, which concerns three factors: sensory properties, personal factors, and environmental factors. Different countries and for different types of products, people most often choose to buy UMPF to protect their health (Ragaert et al. 2004, Moscato and Machin 2018; Wróblewska and Goliszek 2025). Pragmatic factors are also important to buyers of this type of food, including convenience, speed, ease of preparation, and availability (Ragaert et al. 2004; Sillani and Nassivera 2015, Wróblewska and Goliszek 2025) as well as taste and sensory characteristics (Suher et al. 2021). On the one hand, UMPF products may be perceived as more expensive (Prado et al. 2022; Ponte et al. 2025), and the price of UMPF can be a barrier to purchase, but also a motivation. Other market aspects, such as marketing, labelling, and trust, also influence the extent to which these motives translate into actual purchases (Wróblewska and Goliszek, 2025). According to Grunert (2013), three main trends in particular influence food consumption in industrialised societies today: health concerns, sustainable development, and convenience. The factors that most increase consumption of this food category in Poland are lower prices, higher taste qualities, expanding the product range to include organic products, health benefits, a wider range, improved packaging functionality, extended shelf life, and higher income. Lower price was the most important factor driving consumption. Lynn Jayne Frewer and van Trijp (2006) also point out that consumers choose food based on factors such as taste and price. According to Ponte et al. (2025), price and convenience can be barriers to purchase, but clear labelling, credible certification, and targeted information campaigns can build trust and encourage healthier food choices. In the study by Platt et al. (2025), both women and men showed positive and ambivalent attitudes towards health and nutrition, as well as ambivalent attitudes towards consuming minimally processed foods, which, according to Kearney (2010) and da Silva et al. (2022), older people are more interested in consuming. In the studied population in Poland, the less popular motivators increasing UMPF consumption were: more attractive appearance, promotional campaigns, persuasion by friends/family, and fashion/trends. Significant differences were found between genders and age groups in the assessment of the importance of these motivators for increasing UMPF consumption. The study identified five segments of potential consumers based on their assessment of specific factors and their level of UMPF consumption.

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