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Assessment of the place of purchase of vegetables and fruits as expressed by consumers

Ocena miejsca zakupu warzyw i owoców w opinii konsumentów

Synopsis. According to studies, Poland is the leader in the production of certain fruits and vegetables as well as certain food products. The development of discount chains is where the changes are visibly heading. The article presents the results of the most common places to buy fruits and vegetables. The research was carried out on a sample of 812 people. Research shows that consumers most often buy fruits and vegetables in super and hypermarkets, with supermarkets being chosen most often when purchasing all food products. The smallest percentage of respondents declared making food purchases in bazaars and markets. The place of purchase is an important factor for choosing food.

Key words: place of purchase, fruits and vegetables, consumers

Synopsis. Jak wynika z badań, Polska jest liderem w produkcji niektórych owoców i warzyw, a także producentem wybranej żywności. Najbardziej widoczny kierunek zmian stanowi rozwój sieci dyskontowych. W artykule zaprezentowano wyniki dotyczące najczęstszego miejsca zakupu żywności owoców i warzyw, które uzyskano na próbie 812 osób. Jak wynika z badań, konsumenci najczęściej kupują owoce i warzywa w super- i hipermarketach, markety natomiast są wybierane najczęściej w przypadku zakupu całej żywności. Najmniejszy odsetek respondentów dokonuje zakupu żywności na bazarach i targowiskach. Dla 70% respondentów miejsce zakupu jest istotnym czynnikiem decydującym o wyborze żywności.

Słowa kluczowe: miejsce zakupu, warzywa i owoce, konsumenci

Introduction

Poland is the European leader in the production of certain fruits and vegetables, it is one of the largest producers of apples, blackcurrants, blueberries, strawberries, chokeberries, white cabbage, mushrooms, carrots, onions, and tomatoes in the European Union. The production largely exceeds the domestic needs and consequently, we sell nearly

3.5 million t of fruit and vegetables for foreign markets. Despite such high production of vegetables and fruits, Poles still consume a relatively small amount of them [Strojewska 2020]. According to the recommendations of the World Health Organization and the Food and Nutrition Institute, one should eat at least 400 g of vegetables and fruits daily, divided into five or more servings. This is however not followed by Poles who consume only about 280 g of the recommended amount. The research carried out in 2020 at the request of the National Association of Fruit and Vegetable Producers as part of the "National Fruit and Vegetable Consumption Survey" shows that as many as 57% of Poles have a diet that is too poor in vegetables and fruit, and women eat them more often than men [Sikorska 2020]. The retail sector tries to respond to changes in consumer behavior and meet their expectations regarding the range of food products. The more the knowledge of food increases, the more its acceptance increases. Knowledge of food is conditioned by contact with it, which in the literature is also referred to as food exposure [Jeznach 2009]. "Human behavior, including food choice, is to a large extent conditioned by the impact of people with whom the person is in touch" [Jeżewska-Zychowicz et al. 2009]. The changes taking place in the organization of food trade in Poland are the result of, *inter alia*, the implementation of structural innovations by retail enterprises resulting in the emergence of new trade forms. The most notable changes are the dynamic development of the discount store network with the simultaneous "lifting" of their equipment, assortment, and market image. Previously, discount stores based their strategies on price-and-cost leadership, they offered basic versions of relatively low-quality products, but now they are introducing branded products, private labels while improving their image on the market [Lipowski and Agnowski 2004, Maciejewski 2017]. The assortment of fruits and vegetables available at discounters has also improved, market leaders have started to modernize their fruit and vegetable stands, both in terms of the breadth of the available assortment and product merchandising. As part of the fight for customers, it also forced changes in other trading formats. Nowadays, when purposefully shaped sales activation instruments play an extremely important role, enterprises are forced to apply an increasingly active promotion policy [Kowalczuk and Ratyńska-Bojar 2010]. The results of the survey carried out by the Polish Food Institute show that consumers very highly evaluate the quality of the assortment of vegetables and fruit offered in modern trade establishments (super, hypermarkets, and discounters) [Maciejewski 2018].

The article focuses on consumers' assessment of the place of purchase of vegetables and fruits as expressed by consumers.

Research methodology

The study was carried out in the form of an online survey (CAWI) in May 2019 on a sample of 820 people, of which 812 respondents were included in the analysis like the ones who in the filtering question "are you the person responsible for food purchases in your household" gave answers "yes" or "I do some shopping". Additionally, the characteristics of the respondents included: gender, place of residence, the size of their household. The article presents the results of the most common places to buy food, vegetables, and fruits. The results of questions measured on the 5-point Likert scale were also presented. The obtained results were analyzed statistically in the Statistica 13 software. The level of statistical significance was assumed for α = 95% ($p \leq 0.05$) for the variables measured with the Likert scale when comparing the sex of the Mann-Whitney U test with continuity correction. The statements concerned the assessment of the availability of the fruit and vegetable assortment as well as factors related to the price, income, and quality for the purchase of vegetables and fruit.

Table 1. Characteristics of the research sample
Tabela 1. Charakterystyka grupy badawczej

Description	Quantity	**[%]**
Gender		
Woman	417	51.4
Man	395	48.6
Age [years]		
18–24	135	16.6
25–34	221	27.2
35–44	195	24.0
45–54	133	16.4
55 and more	128	15.8
Place of residence		
Village	300	36.9
City to 20 thousand of inhabitants	93	11.5
City to 20–99 thousand of inhabitants	159	19.6
City to 200–499 thousand of inhabitants	144	17.7
City to 500 thousand of inhabitants	116	14.3
Education		
primary or secondary school	47	5.8
trade school	78	9.6
high school	348	42.9
higher education	339	41.8
Monthly net income per 1 person in the household [PLN]		
below 700	59	7.26601
701–1500	276	33.99015
1501–2500	276	33.99015
over 2500	201	24.6
Number of people in the household		
1	55	6.77340
2	171	21.05911
3	220	27.09360
4	214	26.35468
5 and more	152	18.71921

Source: own research, $N = 812$.

Women accounted for 51.4% of the research population. In terms of age, the most numerous groups were people aged 25–34 and 35–44. In the case of the place of residence, over 1/3 of the respondents lived in the countryside and almost 20% were people living in cities with 20 to 99 thousand. As for the inhabitants, the smallest number lived in cities of up to 20,000 inhabitants. More than 40% were people with secondary and higher education, and the smallest group was those with primary or lower secondary education. People with a monthly net income per 1 person in the household in the range of PLN 701–1500 and PLN 1501–2500 each accounted for 1/3 of the studied group, and only 7% of the respondents had an income below PLN 700 net per person in the household (Table 1).

Results and discussion

The respondents were asked to define the most commonplace of food shopping and in a separate question, the most frequent place of purchase of vegetables and fruits. Both general food and vegetables and fruits are most often bought in super and hypermarkets, however, supermarkets are chosen more often for overall food purchases. Discount stores are the second most common place to buy food. Marketplaces and bazaars are in third place – over 28% of respondents choose this place of sale to buy vegetables and fruits, and 11% of respondents buy food there in general. Specialty stores and online stores are the most commonplace to buy food for only about 2% of the respondents (Figure 1).

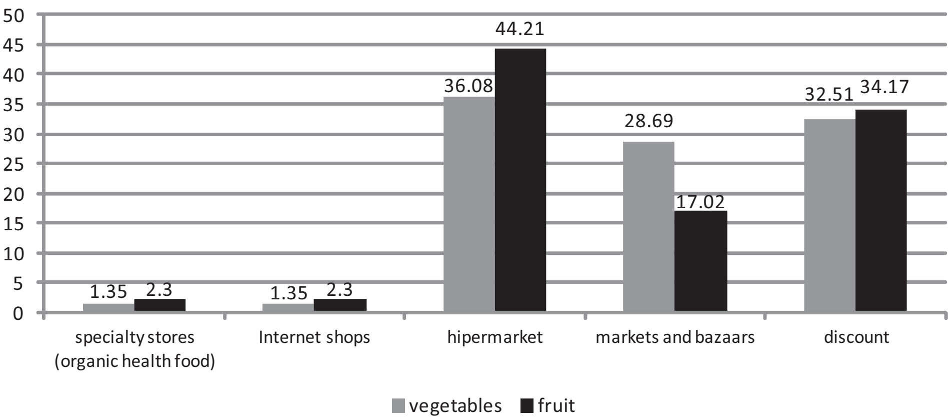

Figure 1. The most common places to buy food, vegetables and fruit [percentage of indications]
Rysunek 1. Najbardziej popularne miejsca zakupu żywności, warzyw i owoców [procent wskazań]
Source: own research, $N = 812$.

Over 70% of the respondents assessed that their place of purchase offers a wide range of fresh vegetables and fruits (Tables 2 and 3). Statistically significant differences in the responses of women and men were noticed in the context of the assortment of fresh fruit, women more often believed that their place of purchase had a wide assortment of fresh fruit. Respondents assessed the breadth of the range of frozen vegetables and fruits worse compared to the fresh ones. As regards the frozen fruits, similarly to the results of fresh fruits, women, statistically significantly more often assessed the breadth of the range of frozen fruits as favorable, while almost 1/3 of men had no opinion about the range of frozen fruits. The respondents assessed the breadth of the assortment of canned vegetables and canned fruits to a similar extent to one of frozen fruits and vegetables. More than 2/3 of women were satisfied with the place where they buy fruits and vegetable men however were less satisfied with the place of purchase of fruits and vegetables. This difference was statistically significant in the Mann-Whitney U test (continuity corrected).

Table 2. Assessment of the vegetable and fruit assortment of the place of purchase by gender
Tabela 2. Ocena asortymentu warzyw i owoców w miejscu zakupu w podziale na płeć

	All	Woman	Man	With correction
S1 The place where I buy has a wide selection of fresh vegetables				
Strongly disagree + disagree (1 + 2)	7.64	7.43	7.85	–1.61
Neither disagree nor agree (3)	18.23	17.03	19.49	
Strongly agree + agree (4 + 5)	74.14	75.54	72.66	
Mean	3.83	3.87	3.78	
S2 The place where I buy has a wide selection of fresh fruit				
Strongly disagree + disagree (1 + 2)	7.51	6.47	8.61	–3.13*
Neither disagree nor agree (3)	19.95	16.31	23.80	
Strongly agree + agree (4 + 5)	72.54	77.22	67.59	
Mean	3.80	3.88	3.72	
S3 The place where I buy has a wide variety of frozen vegetables				
Strongly disagree + disagree (1 + 2)	10.59	11.27	9.87	–1.44
Neither disagree nor agree (3)	25.37	21.34	29.62	
Strongly agree + agree (4 + 5)	64.04	67.39	60.51	
Mean	3.63	3.65	3.59	
S4 The place where I buy has a wide selection of frozen fruit				
Strongly disagree + disagree (1 + 2)	14.53	14.15	14.94	–3.02*
Neither disagree nor agree (3)	26.23	20.38	32.41	
Strongly agree + agree (4 + 5)	59.24	65.47	52.66	
Mean	3.52	3.60	3.43	
S5 The place where I buy has a wide selection of canned vegetables				
Strongly disagree + disagree (1 + 2)	10.22	10.31	10.13	–1.70
Neither disagree nor agree (3)	28.57	24.94	32.41	
Strongly agree + agree (4 + 5)	61.21	64.75	57.47	
Mean	3.59	3.64	3.55	
S6 The place where I buy has a wide selection of canned fruit				
Strongly disagree + disagree (1+2)	11.82	11.75	11.90	–1.22
Neither disagree nor agree (3)	28.82	27.10	30.63	
Strongly agree + agree (4+5)	59.36	61.15	57.47	
Mean	3.57	3.60	3.53	
S7 I'm happy with the place where you buy vegetables and fruits				
Strongly disagree + disagree (1 + 2)	7.14	6.95	7.34	–3.30*
Neither disagree nor agree (3)	20.94	17.27	24.81	
Strongly agree + agree (4 + 5)	71.92	75.78	67.85	
Mean	3.81	3.89	3.72	

*Test U Manna-Whitney (corrected for continuity) *p*-value <0.05

Source: own research, $N = 812$.

Table 3. Opinions on purchases of fruits and vegetables
Tabela 3. Opinie o zakupach owoców i warzyw

	All	Women	Men	With correction
S8 I think vegetables are reasonably priced where most food is bought				
Strongly disagree + disagree (1 + 2)	10.34	8.63	12.15	–3.63*
Neither disagree nor agree (3)	21.55	16.79	26.58	
Strongly agree + agree (4 + 5)	68.10	74.58	61.27	
Mean	3.68	3.78	3.58	
S9 I think the fruit is affordable where most of the food is bought				
Strongly disagree + disagree (1 + 2)	10.34	9.59	11.14	–2.45*
Neither disagree nor agree (3)	22.41	18.71	26.33	
Strongly agree + agree (4 + 5)	67.24	71.70	62.53	
Mean	3.67	3.74	3.59	
S17 Income limit me the opportunity to purchase more vegetables				
Strongly disagree + disagree (1 + 2)	45.69	43.41	48.10	–0.98
Neither disagree nor agree (3)	26.23	27.82	24.56	
Strongly agree + agree (4 + 5)	28.08	28.78	27.34	
Mean	2.73	2.76	2.69	
S18 Income limit me the opportunity to buy more fruit				
Strongly disagree + disagree (1 + 2)	42.49	41.49	43.54	–0.32
Neither disagree nor agree (3)	26.11	27.34	24.81	
Strongly agree + agree (4 + 5)	31.40	31.18	31.65	
Mean	2.81	2.82	2.79	
23S16 I am happy to buy fruit and vegetables that are subject to a special price				
Strongly disagree + disagree (1 + 2)	6.53	6.71	6.33	–2.88*
Neither disagree nor agree (3)	21.18	17.99	24.56	
Strongly agree + agree (4+5)	72.29	75.30	69.11	
Mean	3.86	3.93	3.79	
I am able to go to another store to buy fruit and vegetables at promotional prices				
Strongly disagree + disagree (1 + 2)	17.61	17.51	17.72	–0.65
Neither disagree nor agree (3)	29.80	29.74	29.87	
Strongly agree + agree (4 + 5)	52.59	52.76	52.41	
Mean	3.44	3.46	3.42	
23S18 I am able to go to another store to buy higher quality fruit and vegetables				
Strongly disagree + disagree (1 + 2)	16.26	17.75	14.68	0.92
Neither disagree nor agree (3)	29.56	29.26	29.87	
Strongly agree + agree (4 + 5)	54.19	53.00	55.44	
Mean	3.48	3.44	3.52	

*Test U Manna-Whitneya (corrected for continuity) *p*-value <0.05
Source: own research, $N = 812$.

Conclusions

Vegetables and fruits should form the basis of the diet, so consumers must have high availability of them in their preferred places of purchase. As a society, we still eat insufficient amounts of this food group. The conducted research shows that the most common places to buy food in general, as well as vegetables and fruits specifically, are super and hypermarkets, discount stores, markets, and bazaars. However, in the case of fruits and vegetables, respondents make purchases at marketplaces and bazaars more often than in the case of food in general. According to the respondents, they are most satisfied with the assortment of fresh vegetables and fruits available in their place of purchase, and the least with fruits sold in the form of frozen food and canned food. At the same time, the respondents highly rate the places where they buy food. The obtained results allow us to conclude that women are more aware of the available assortment of vegetables and fruits, while men more often do not have an opinion about its range. Besides, it was found that the overwhelming majority of respondents believe that vegetables and fruits are attractive price-wise in the place where they buy most of their food and they are very eager to take advantage of the available price promotions for this food category. Despite the price sensitivity, the surveyed consumers are more likely to shop elsewhere if the quality of the fruits and vegetables offered there is higher.

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