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Comparative Analysis of Generation Z Consumer Behavior in Poland and Germany: Implications for the Organic Food Market

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Abstract:

Purpose: *The aim of this study was to evaluate the behavior of Generation Z consumers in the context of trends on the organic food market and to describe the prospects for the future development of that market.*
Design/Methodology/Approach: *The study focused on organic food markets in Germany and Poland which are the leading agricultural producers in Western and Central-Eastern Europe, respectively. The research problems were validated by reviewing the literature, analyzing statistical data on the food and organic food market, and conducting a survey of Gen Z consumers in Germany and Poland.*
Findings: *The study demonstrated that both the global and the European organic food markets have developed rapidly in the last two decades and that the organic food segment plays an important role in agricultural production. The survey revealed that Gen Z consumers are highly eco-conscious in both Poland and Germany, but the organic food market has grown at a much higher rate in Germany. The COVID-19 pandemic and the war in Ukraine have contributed to social uncertainty and inflation, which decreased consumers' purchasing power. These factors exerted a more negative influence on the organic food market in Poland which is characterized by lower household incomes and higher consumer expenditure on food. However, the implementation of European Green Deal policies and the steady improvement in the economic outlook can be expected to revive the growth of the organic food market in the European Union.*
Practical Implications: *Public institutions and market actors should initiate extensive educational campaigns to minimize differences in consumer behaviors and attitudes towards eco-friendly products, and to raise awareness that purchasing decisions affect the health and quality of life of entire societies. For young consumers belonging to Generation Z, a crucial aspect in their selection of products and services pertains not only to the environmental impact, but also to how these products affect their health and overall well-being. Given Generation Z's inclination towards online shopping and mobile application usage, the integration of modern tools as distribution channels into the operational framework of food producers on a larger scale appears to be a rational move.*
Originality/Value: *The majority of scholarly works addressing these topics typically consist of case studies pertaining to a particular domestic market (especially in relation to Gen Z*

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consumer behavior). As of now, there is a notable absence of research endeavors aimed at understanding the variances in Generation Z's consumption behavior concerning food items at the multinational level and forecasting the trajectory of this market through a cross-national comparative study. The present study addresses this identified research gap.

Keywords: *Food market, consumer behavior, organic food, Generation Z.*

JEL codes: *D12, F16, Q13.*

Paper type: *Research article.*

1. Introduction

The study suggests a growing consumer inclination towards organic food choices, particularly organic dairy and meat. The complexity of processing organic food leads to significant transaction expenses, predominantly stemming from limited distribution. Consequently, the primary channel for distributing such products is through their retail in smaller outlets.

The EU's agri-food chain is an important sector of the economy that guarantees food security for more than 440 million consumers in the EU (Eurostat, 2023a). The From Farm to Fork Strategy proposed by the European Commission in 2020 is one of the key components of the European Green Deal which aims to change food production and consumption, reduce the carbon footprint of food production systems, increase their resilience to crises, while providing the present and future generations of European consumers with access to healthy and affordable food (European Union, 2020).

In recent years, the European Union has shown a rise in its endeavors to safeguard the natural environment, particularly concerning the preservation of agricultural lands, which is increasingly identified as a primary challenge amidst the evolving climate conditions (Zieliński *et al.,* 2022). The escalating environmental and climate challenges necessitate the exploration of efficient remedies within economic sectors, such as agriculture (Prandecki *et al.,* 2021; Cristea *et al.,* 2022).

The prospects for the development of the EU organic food market were described, and potential discrepancies in the process of drafting new regulations on food production and the Common Agricultural Policy were characterized on the example of two EU Member States: Germany as the largest national economy in the EU, and Poland as the largest EU economy in the group of former Soviet bloc countries.

In Germany, the gross domestic product (GDP) at market prices reached EUR 3,855 billion in 2022 and increased by 1.8% relative to the previous year. With a population of 84.4 million and GDP per capita of EUR 46,000, Germany is a leading

market in both the EU and the world.

In turn, Poland is the largest economy in the group of Central-Eastern European countries that joined the EU in 2004 and later years. In 2022, Poland was the sixth largest economy in the EU with a GDP of EUR 656 billion and a population of 37.6 million (Eurostat, 2023b; 2023c). Poland and Germany also play an important role on the organic food market.

In 2021, the value of the organic food market reached EUR 15.9 billion in Germany (highest in the EU) and EUR 314 million in Poland (highest in Central-Eastern Europe) (The World of Organic, 2023). There is a widespread belief that organic agriculture in Poland has the potential to emerge as a key component of sustainable rural development, attributed to its distinct environmental, economic, and social advantages (Smoluk-Sikorska, 2019).

However, findings from research conducted by W. Łuczka among farmers indicate that Polish organic farmers often highlight inadequate yields and production levels as the primary factors shaping their perception of organic farming as a risky venture (Łuczka, Kalinowski, 2020).

The aim of this study was to evaluate the behavior of Gen Z consumers in the context of trends on the organic food market and to describe the prospects for the future development of that market. The following research questions (RQ) were addressed in the study:

- *RQ1: What are the recent organic market trends in Poland and Germany?*
- *RQ2: What are Gen Z's attitudes towards organic food products in Poland and Germany?*
- *RQ3: Which factors affect Polish and German consumers' environmentally-friendly food choices?*
- *RQ4: To what extent will the future growth of the organic food market be affected by the economic crisis caused by the COVID-19 pandemic and the war in Ukraine?*

As indicated in the existing academic literature, the primary sources predominantly focus on examining distinctively the attributes of purchasing habits among Generation Z consumers and conducting analyses specifically concerning the food market. The majority of scholarly works addressing these topics typically consist of case studies pertaining to a particular domestic market (especially in relation to Gen Z consumer behavior) or, in the case of the European Union, discussions regarding food market matters are predominantly situated within a pan-European framework.

As of now, there is a notable absence of research endeavors aimed at comprehensively understanding the variances in Generation Z's consumption behavior concerning food items at the global level and forecasting the trajectory of

this market through a cross-national comparative study. The present study addresses this identified research gap.

2. Literature Review

According to the literature, consumer behaviors on the food market are highly diverse and are influenced by two opposing trends, consumerism and the ecologization of consumption (Rogala, 2015). The ecologization of consumption is the practice of making more responsible and environmentally-friendly purchasing decisions (Matel *et al.*, 2018; Grzybowska-Brzezińska and Grzywińska-Rąpca, 2018; Kuzmina *et al.*, 2023).

This term can also be interpreted in the context of the sustainable development paradigm. In this approach, the ecologization of consumption involves measures undertaken to limit the use of non-renewable resources and to minimize waste (Żakowska-Biemans, 2011). These trends are clearly visible in the attitudes of Generation Z (Gen Z) consumers who, according to research, are more likely to recognize the importance of sustainable development than the previous generations (Ribeiro *et al.*, 2023).

There is no universally agreed upon cutoff date in the academic literature that definitively establishes the birth period of individuals belonging to generation Z. Determining the timeline is contingent upon the specific research context and analytical objectives. Some scholars associate Generation Z with the Millennial cohort and identify them as the post-millennial generation. In this framework, generation Z encompasses individuals born from the 1990s through the early years of the 21st century (Oliwa, 2015; Waśko, 2016).

Given the shifts in population demographics and statistical data, certain researchers (e.g., Dimock, 2019; Sharma, Srivastav, 2023; Borawska-Kalbarczyk, 2013) specify the birth year of Generation Z members as those born after 1997 — this criterion has also been adopted for further examination by the authors of this scholarly work. As a result of the heightened interest in environmental and societal concerns, Generation Z is often recognized as the "Green Generation," demonstrating a proclivity towards sustainable living practices and environmental stewardship.

Additionally, they are alternatively referred to as the "i-Generation," "C-generation," or "Digital Natives" — denoting the initial cohort to grow up and reside in the digital age where the Internet serves a pivotal role in daily interactions, communication, and information retrieval from the surroundings (Krzeszowska, 2017; Oliwa, 2015; Waśko, 2016; Borawska-Kalbarczyk, 2013).

Brooks (2022) emphasizes that due to their upbringing amidst technological advancements, Generation Z, currently entering the workforce, exhibits a distinct communication style, work ethic, purchasing behavior, and consumption patterns,

diverging from those observed in preceding generations. Notably, this cohort displays a strong inclination towards purchasing branded goods, extending to decisions regarding food acquisition, marking a notable contrast between Generation Z and their parental and grandparental counterparts (Sharma and Srivastav, 2023).

An understanding of the buying behaviors and awareness levels of different generations plays a particularly important role in the context of sustainable development goals that have been adopted by all European Union (EU) Member States in line with the United Nations 2030 Agenda for Sustainable Development (UN, 2015). At present, Gen Z accounts for around 40% of global consumers and will represent the largest consumer generation in the world by 2030 (Zhang *et al.,* 2023).

Therefore, Gen Z's consumer behaviors as well as external factors that determine the structure of consumption, including the COVID-19 pandemic, the war in Ukraine, and climate change which affect agricultural production, supply chain logistics, and lead to considerable fluctuations in food prices (FAO, 2023), should be analyzed to predict future trends in the production of food as a basic necessity that is largely dependent on the condition of the natural environment.

The investigation carried out by Grzybowska-Brzezińska and Grzywińska-Rąpca, *et al.* (2022) regarding the identification of key factors impacting the purchasing behavior of generation Z revealed that a majority of youthful consumers acknowledge the adverse environmental effects of excessive shopping (65.8% of participants).

Conversely, unplanned food purchases (72.5%), driven by sudden whims or product promotions, were most commonly cited among impulsive buying tendencies. The discrepancy between the articulated beliefs of Generation Z individuals on the necessity of adopting eco-friendly practices in consumption and their actual behaviors, attributable to their youth, highlights the need for further examination to comprehend the evolving trends in this demographic.

The ecologization of consumption on the food market is a trend whereby consumers are more willing to buy locally produced goods (Wojciechowska-Solis, 2022). Locally produced goods are defined as items that are not mass produced, are made from local resources and/or with the use of local production methods, and are sold on the local market.

Organic agriculture may serve as a significant contributor to local development, as emphasized by Jasiński *et al.* (2014), impacting the enhancement of farmers' economic conditions, the cultivation of social capital, and the reinforcement of their connections with the market, as noted by Śpiewak (2016).

Eco-conscious consumers have a growing interest in local food products, including

traditional, regional, and organic food (Rogala, 2014). This trend is also reflected in the From Farm to Fork Strategy which delineates the future goals of the Common Agricultural Policy of the EU (Krzyżanowski, 2021). The abbreviation of the supply chain for specific food items is also apparent in the study conducted by Smoluk-Sikorska (2019).

3. Research Methodology

The first stage of the study involved a review of the literature on the development of the organic food market and consumer behaviors on that market, with special emphasis on Gen Z consumers. Statistical data on organic food production, market size, and organic food consumption published by the Research Institutes of Organic Agriculture FiBL, Eurostat, and the Food and Agriculture Organization of the United Nations (FAO) were aggregated and processed in the next step.

Because of the temporal displacement of the most recently accessible documents (i.e., reports disseminated in 2023, encompassing data up to the conclusion of 2021), an examination of the landscape within the realm of the food market was conducted up to the termination of 2021, in order to establish a foundation for subsequent investigations.

These data were organized into time series; market growth indicators were determined, and the resulting data were analyzed. German and Polish organic food markets were also compared with the EU and global markets.

The attitudes of Gen Z consumers were evaluated based on the results of an empirical study that was conducted in 2022 on Polish (163 respondents) and German consumers (148 respondents) born between 1997 and 2004. The research employed a method of stratified random sampling in order to ensure that its composition accurately represented the demographic profile of individuals who may have an inclination towards the consumption of organic food.

This demographic profile primarily consists of urban dwellers with at least a secondary level of education, predominantly females, and individuals who are relatively well-off economically (Hughner *et al.,* 2007).

In both countries, the surveys involved respondents with different professional and financial status, and most of the surveyed subjects were women (71.3% in Poland, 62.2% in Germany). Gen Z consumers are young people, and university students accounted for 47% and 58% of the respondents in Poland and Germany, respectively.

The remaining respondents were professionally active individuals who earned an income. Approximately one-third of the surveyed subjects (31.7% in Poland, 36.5% in Germany) assessed their financial status as good or very good; 57.3% of Polish

respondents and 40.5% of German respondents evaluated their financial standing as average; whereas every tenth Polish respondent (10.9%) and every fourth (23%) German respondent declared that their financial status was poor or very poor.

The study was conducted with the use of the CAWI (*Computer Assisted Web Interview*) method and an online questionnaire, which allowed parallel access to groups of respondents in both countries.

To minimize the probability of language-related errors, the questionnaire was developed in Polish and German, and the clarity of the questions in each language version was validated during a pilot study.

The part of the survey that is addressed in the present study concerns the respondents' attitudes towards organic food, food sold in organic packaging, adherence to zero-waste principles in daily life, and readiness to pay more for food products that are less healthy and less eco-friendly if additional charges were to be imposed on such products. The questionnaire involved single-choice and multiple-choice questions, and the respondents assessed their views and attitudes on a 5-point Likert scale.

The results generated by both secondary and primary data were analyzed and interpreted with the use of descriptive statistics and a comparative analysis. Selected data were described, and presented in graphic and tabular form.

4. Research Results

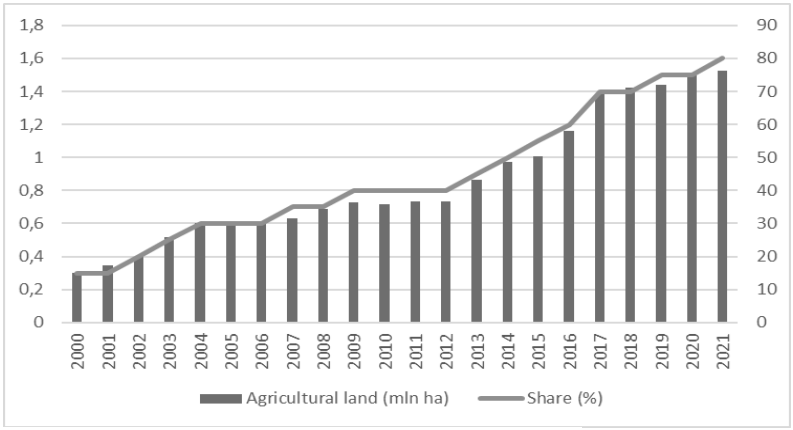
4.1 Trends on the Organic Food Market

In pursuit of addressing research question 1 (*What are the recent organic market trends in Poland and Germany?*), we conducted a comprehensive analysis of the variations in organic land area, producer count, market magnitude, and organic food consumption in both Germany and Poland within the context of the European Union and global perspectives.

Organic farming developed rapidly in the 21st century (Figure 1). In 2000-2021, the area of land under organic crops increased five-fold, from 15 million to 76 million ha. A similar increase was observed in the agricultural area under organic farming, which accounted for 1.6% of total available area at the end of the analyzed period.

The most rapid growth was observed between 2012 and 2017, when organic farmland doubled. A clear decrease in the growth rate of organic farmland was observed during the 2008 global economic crisis and the COVID-19 pandemic in 2020-2021.

Figure 1. *Growth of organic agricultural land and organic share in the world (ha, %)*



Source: *Research Institute of Organic Agriculture FiBL (2023).*

Europe, in particular Western Europe, is a major producer of organic food. In 2021, nearly 25% of agricultural land under organic farming was located in Europe. The EU Member States are the leading organic food producers on the European continent. In Germany, 10% of agricultural land is managed organically, and organic farmland increased by 65% between 2015 and 2021 (Table 1).

A reverse trend was noted in Poland, where organic farmland decreased from 0.58 million ha (53% of organic farmland in Germany and 5.2% of total organic farmland in the EU) in 2015 to 0.51 million ha (28% of organic farmland in Germany and 3.3% of total organic farmland in the EU) in 2021.

Table 1. *Organic farmland and its share in total agricultural land in Germany, Poland, European Union, and Europe (million ha, %)*

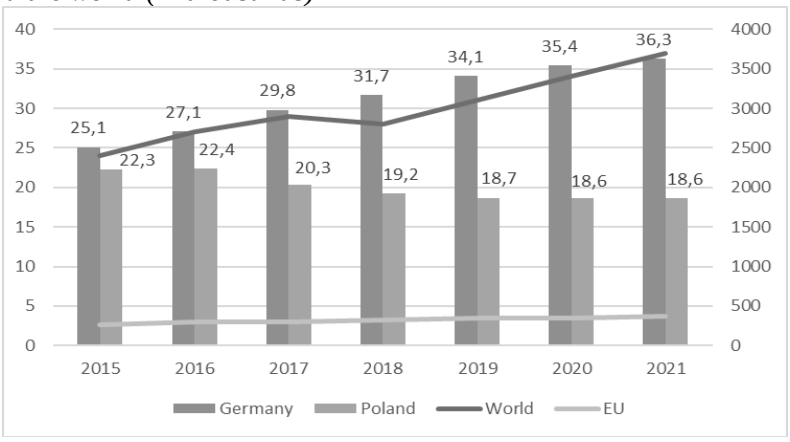
Country/ Region	**Unit**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Growth rate *2015 = 100***
Germany	million ha	1.09	1.25	1.37	1.52	1.61	1.7	1.8	*165.1*
	%	6.5	7.5	8.2	9.1	9.7	10.2	10.8	*166.2*
Poland	million ha	0.58	0.54	0.49	0.48	0.51	0.51	0.51	*88.9*
	%	3.8	3.7	3.4	3.4	3.5	3.5	3.5	*92.1*
European Union	million ha	11.2	11.6	12.8	13.8	14.6	14.9	15.6	*139.3*
	%	6.2	6.7	7.2	7.7	8.1	9.2	9.6	*154.8*
Europe	million ha	12.7	13.5	14.6	15.6	16.5	17.1	17.8	*140.2*
	%	2.5	2.7	2.9	3.1	3.3	3.4	3.6	*144.0*

Source: *Own elaboration based on the Research Institute of Organic Agriculture FiBL (2023).*

Similar trends were noted in organic food production. The number of organic food producers increased both in the world and in the EU (Figure 2). In 2021, there were 3.7 million organic food producers in the world, including 378,000 in the EU.

In 2015-2021, the number of organic food producers in Germany increased by nearly 45% to 36,300, whereas a decrease of 16.6% was observed in Poland in the corresponding period. In 2015, the number of organic food producers was 2,800 lower in Poland than in Germany, but by 2021, this difference increased more than six-fold and reached 17,700.

Figure 2. *Organic food producers in Germany and Poland relative to the European Union and the world (in thousands)*



Source: *Own elaboration based on the Research Institute of Organic Agriculture FiBL (2023).*

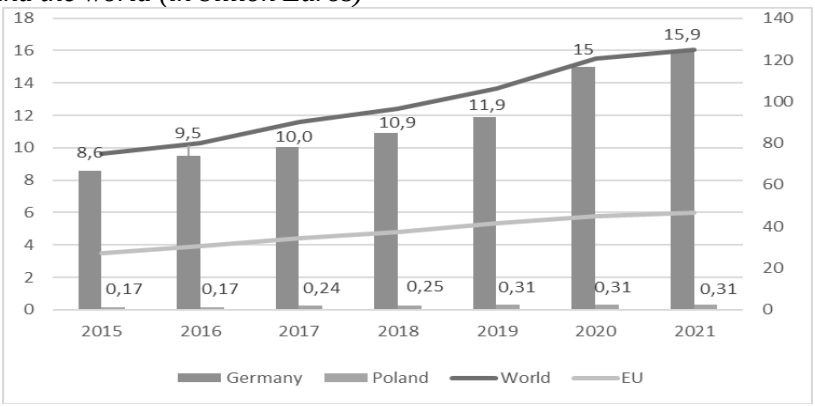
The value of the organic food market increased steadily in the analyzed period (Figure 3). The global value of the organic food market increased from EUR 15.1 billion in 2000 to EUR 75 billion in 2015 and EUR 124.8 billion in 2021 (*The World of Organic*, 2023).

The German organic market doubled in value from EUR 8.6 billion to 15.9 billion in the studied period, and it accounted for 13% of the global market and 34% of the EU market at the end of 2021.

In Poland, the organic market increased substantially between 2015 and 2019 when it reached EUR 310 million. The value of the Polish organic market did not change in the following two years.

The difference in the value of Polish and German organic markets considerably exceeds (51-fold) the difference in organic farmland (3.5-fold) and the number of organic food producers (2-fold).

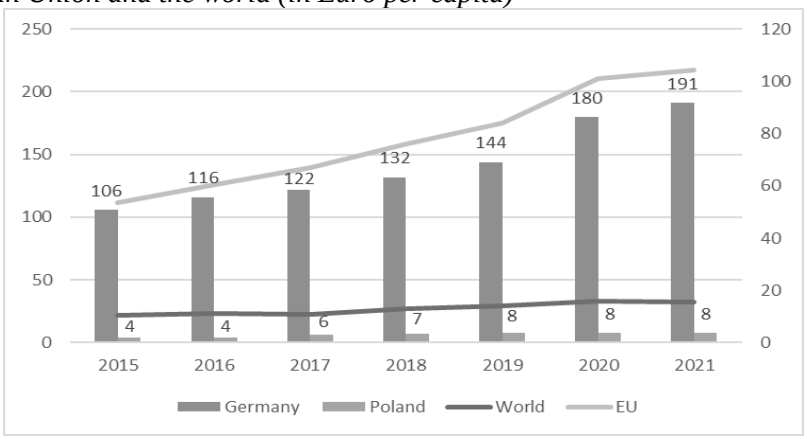
Figure 3. *Organic food market in Germany and Poland relative to the European Union and the world (in billion Euros)*



Source: *Own elaboration based on the Research Institute of Organic Agriculture FiBL (2023).*

These changes also affected consumer spending on organic food. In 2021, per capita consumer spending on organic food reached EUR 15.7 in the world and EUR 104.3 in the EU on average (Figure 4). In Germany, per capita spending on organic food was determined at EUR 191 in 2021 (marking a nearly 100% increase from 2015), whereas in Poland, this parameter has remained stable at EUR 8 per capita since 2019. These values point to clear differences between Polish and German markets, both in the static and the dynamic approach.

Figure 4. *Consumption of organic food in Germany and Poland relative to the European Union and the world (in Euro per capita)*



Source: *Own elaboration based on the Research Institute of Organic Agriculture FiBL (2023).*

Disposable household income in the analyzed countries is one of the key factors that affect the demand for organic food products. Household incomes differed considerably in Poland and Germany in the studied period (Table 2).

Table 2. *Disposable household income in Poland, Germany, and the European Union in 2015-2021 (in Euro per capita)*

	Unit	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Poland	Euro per capita	14 618	15 093	15 541	16 166	16 933	17 828	17 940
Germany		25 992	26 823	27 652	28 711	29 047	29 567	30 447
EU		20 211	20 717	21 362	22 028	22 753	23 038	24 192
Poland/Germany	%	0.56	0.56	0.56	0.56	0.58	0.60	0.59
Poland/EU		0.72	0.73	0.73	0.73	0.74	0.77	0.74

Source: *Own elaboration based on Eurostat (2023).*

In 2015, disposable household income in Poland accounted for 0.56 and 0.72 of the values noted in Germany and the EU, respectively. Significant changes were not observed in the following years, and in 2021, household income in Poland increased to 0.59 and 0.74 of the values reported in Germany and the EU, respectively. Such significant differences in income levels support a different interpretation of Engel's law in the analyzed countries.

In general, food demand is more responsive to changes in income (income elasticities are higher in the range of 0 to 1) because food is a basic necessity, but organic food is more expensive and can be regarded as a luxury item on the relatively poorer Polish market.

The expenditure towards organic food may vary based on a range of factors, such as the income level, educational background, and environmental consciousness of consumers, as well as the marketing tactics employed by producers (Hermaniuk, 2018).

Polish consumers spend nearly 20% of their income on food (German consumers spend approx. 12%; Eurostat, 2021), and income plays a much more important role. Household incomes are three times higher in Germany than in Poland (according to Eurostat (2022), the average annual income of full-time employees in 2021 reached EUR 44,404 in Germany and EUR 14,431 in Poland), and German consumers can afford to buy more organic food products and food items with the ECO label because the prices of these products are lower relative to their incomes.

This observation could explain the decrease in Polish consumers' spending on organic food during a crisis. However, due to the steady increase in Polish households' incomes, the difference between Poland and Germany is likely to be reduced in the coming years, which could boost organic food consumption in Poland.

4.2 Eco-conscious Behavior of Gen Z Consumers on the Food Market

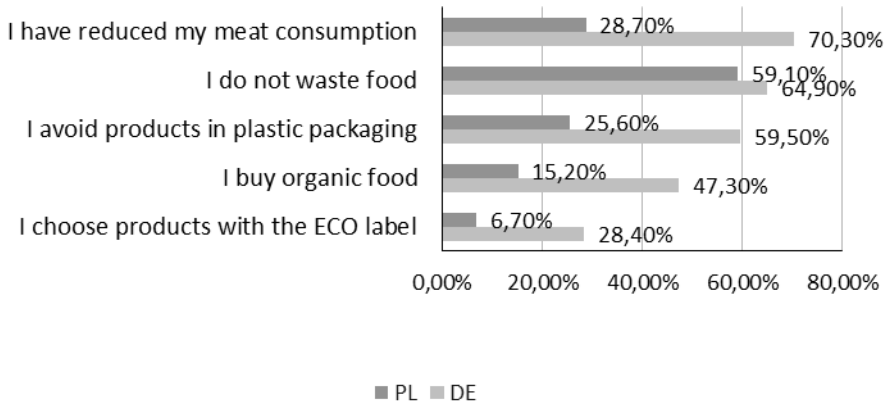
Investigating research question No. 2, which explores the attitudes of Generation Z representatives from Poland and Germany towards organic products in their daily lives, delved into the environmentally conscious behaviors of these consumers concerning food consumption.

This analysis focused on their adoption of contemporary food shopping techniques facilitated by various applications, as well as their willingness to modify their buying habits and accept extra costs associated with purchasing food items that are detrimental to health or packaged in environmentally unfriendly ways.

An analysis of the behavior of Gen Z consumers on Polish and German food markets indicates that German consumers tend to be more eco-conscious. Women are also more likely to make eco-friendly food buying decisions than men. An analysis of the respondents' daily food shopping habits (Fig. 5) revealed that Polish and German consumers differed mainly in their attitudes towards meat consumption: 70.3% of German respondents vs. only 28.7% of Polish respondents declared that they had limited their meat intake.

Considerable differences (33.9 pp) were also noted in Polish and German consumers' attitudes towards plastic packaging (which was avoided by 59.5% of German respondents and 25.6% of Polish respondents) and organic food (organic food was purchased by 47.3% of German respondents and 15.2% of Polish respondents). Similar values were noted with respect to avoiding food waste. Approximately 60% of the surveyed Gen Z consumers from both countries were committed to reducing food loss (difference of 5.8 pp).

Figure 5. *Daily life habits of Gen Z consumers from Poland and Germany*

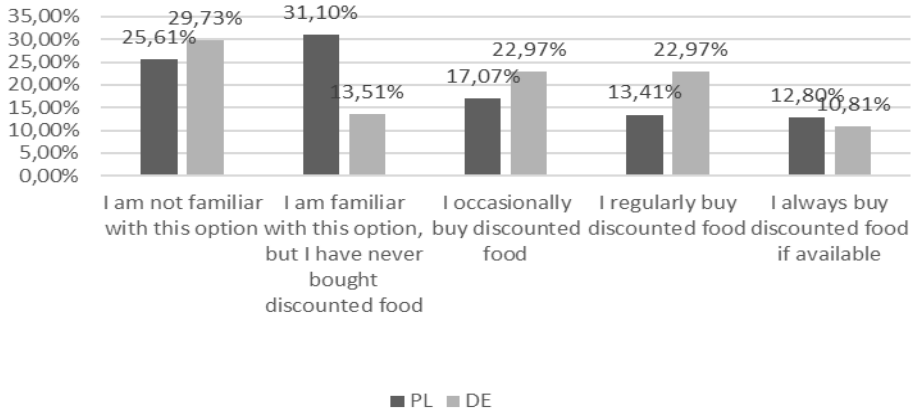


Source: *Own elaboration.*

German Gen Z consumers were also more likely to adhere to zero-waste policies in their daily eating and shopping habits by buying unsold food from shops and restaurants at reduced prices. To reduce food waste, consumers can use mobile apps which provide real-time information about discounted food that can be purchased from shops and restaurants at the end of the day.

Despite the fact that a similar percentage of Gen Z consumers in both countries were not familiar with this option (25.6% in Poland, 29.7% in Germany), discounted food was occasionally purchased by a higher number German respondents (56.75%) than Polish respondents (43.28%) (Figure 6).

Figure 6. *Generation Z consumers from Poland and Germany who purchased discounted food from shops/restaurants at the end of the day to prevent food waste*



Source: *Own elaboration.*

An analysis of young consumers' willingness to change their food buying habits or pay a higher price for less eco-friendly products (if additional fees or taxes were to be imposed on such goods) revealed that consumers were more willing to change shopping habits that were related not only to environmental protection, but also health protection. In both countries, Gen Z shoppers were most willing to reduce their alcohol consumption and/or pay more for alcoholic beverages in metal cans, but they were less willing to pay more for beverages in glass bottles and food in plastic packaging (Table 2).

Table 2. *The willingness of Gen Z consumers to change their shopping habits and pay more for less environmentally-friendly products*

Alternative behavior if the prices of selected products were to	I would definitely buy a cheaper product or service		I would rather buy a cheaper product or service		I would buy a more expensive product only if I had no choice		I would rather buy a more expensive product		I would definitely buy a more expensive product	
	Poland	Germany	Poland	Germany	Poland	Germany	Poland	Germany	Poland	Germany

increase										
Pay more for beverages in glass bottles	14.02%	12.16%	11.59%	8.11%	24.39%	29.73%	35.37%	20.27%	14.63%	29.73%
Pay more for food in plastic packaging	20.12%	12.16%	20.12%	8.11%	26.83%	17.57%	25.61%	43.24%	7.32%	18.92%
Reduce alcohol consumption	12.80%	12.16%	7.32%	13.51%	14.02%	9.46%	28.66%	21.62%	37.20%	43.24%
Pay more for beer in aluminum cans	20.12%	4.05%	10.37%	5.41%	18.29%	14.86%	26.22%	29.73%	25.00%	45.94%

Source: *Own elaboration.*

5. Discussion

Significant differences in organic food production, organic food sales, and the behavior of Gen Z consumers in Poland and Germany indicate that the EU is not a homogeneous market in terms of food shopping and eating habits of the youngest generation of adult Europeans.

With reference to research question No. 3 (Which factors affect Polish and German consumers' environmentally-friendly food choices?) several main factors influencing the pro-ecological choices of consumers from Poland and Germany on the food market should be indicated. According to Miecznikowska-Jerzak (2022), unlike in the EU, including Germany, organic food production in Poland has decreased in recent years, mainly due to economic and logistic factors.

The growth of the Polish organic food market is influenced by considerably lower household incomes and lower levels of environmental awareness in the Polish society. In addition, relatively low farmer education and the absence of cohesive financial and organizational support schemes for agricultural producers pose a barrier to the implementation of the European Green Deal in Poland.

In Germany, the organic farming sector has experienced stable growth for many years. The organization of agricultural production is one of the key growth drivers on the organic food market. In 2018, German organic farms were five times larger than Polish farms (Kierunki i możliwości..., 2022).

Brand trust also plays an important role in the development of the organic food market. The organic food sector in Germany is well organized and stable, which facilitates consumer decisions (Murphy, 2022).

Organic market growth is also determined by consumers' familiarity with organic or regional food brands.

However, not all differences in Polish and German consumers' behaviors relating to organic food can be explained by income disparities, as demonstrated by the similar percentage of respondents who took active steps to reduce food waste. If Gen Z's food choices were motivated solely by income, Polish consumers would be far more economical in their preferences and habits.

In addition, the fact that young Germans are 2.5-times more likely to limit their consumption of meat, which is a traditional food item in both Polish and German cuisine (meat prices are similar in Poland and Germany), and are also more willing to reduce their alcohol intake suggests that the differences between young Poles and Germans result mainly from social factors, environmental education, and public health promotion.

The fact that German respondents were more willing to reduce their alcohol intake and refrain from buying food in plastic packaging supports this hypothesis. Żakowska-Biemans and Gutkowska (2018) analyzed the factors affecting consumers' food purchasing decisions and found that avoidance of food waste was also a high priority for the surveyed respondents.

Consumers are an important link in the food supply chain, and zero-waste policies based on the 3R concept (reduce, reuse, and recycle) can be implemented more effectively at both the domestic and the international level by educating consumers (Sang *et al.*, 2022). The German Packaging Act is an example of a regulatory effort which encourages consumers to make environmentally-friendly purchasing decisions.

The act has been in force since the beginning of 2019, and it places all manufacturers and distributors who bring sales packaging into circulation with their goods under the obligation to take back or recycle the packaging (Podsiadło, 2023). The Act increased the cost of producing goods in plastic packaging, which prompted manufacturers to use other types of packaging, but it also encouraged German consumers to search for more eco-friendly options.

In 2021, Wojciechowska-Solis surveyed Polish consumers of regional and local products and also found that income is not the only factor that motivates consumers to buy organic food. In the cited study, 30% of the surveyed subjects declared that they would not decrease their consumption if prices increased by 25%, whereas more than 60% of the respondents were insensitive to price changes in the range of 10-15% (Wojciechowska-Solis, 2022).

Dziekan and Konieczny (2017) also reported significant differences in factors determining organic food purchases among respondents with different education

levels. The safety and health-promoting attributes of organic food were the main factors which prompted consumers with university and secondary school education to buy organic food.

Respondents with secondary education also claimed that organic food has a superior taste, and they purchased organic products to protect the environment and support local producers. In turn, respondents with primary school education were most likely to buy organic food due to its safety and superior taste, for dietary reasons, and to support local producers, but they were least concerned with environmental issues (Dziekan and Konieczny, 2017).

According to Ewe and Tjiptono (2023), in addition to income, product brand is also an important consideration for young eco-conscious consumers. The cited authors found that when consumers were more familiar with eco-friendly than non-eco-friendly brands, their attitudes towards, willingness to buy and pay more for eco-friendly products were considerably higher in comparison with non-eco-friendly products.

In contrast, these effects were not significant when consumers were more familiar with non-eco-friendly than an eco-friendly brands. Research undertaken on a cohort of Polish consumers also revealed that the awareness of brand ownership among food producers holds significance for 76% of individuals aged 16-19 years and 80% of purchasers aged 20-25 years belonging to generation Z (Nikodemska-Wołowik *et al.*, 2019).

These results indicate that effective marketing communication not only enables food producers to increase profits, but that advertising messages also indirectly influence market trends and social changes associated with the ecologization of consumption.

The macroeconomic situation in Poland and Germany was also analyzed for the needs of this study. Referring to research question No. 4 (To what extent will the future growth of the organic food market be affected by the economic crisis caused by the COVID-19 pandemic and the war in Ukraine?), it should be noted that both The COVID-19 pandemic and the war in Ukraine had significant social and economic consequences in both countries.

Feelings of instability, exacerbated by inflation and loss of purchasing power are directly responsible for changes in consumer behavior. Research carried out by Sekścińska in 2022 revealed that during periods of inflation, Polish households tend to reduce their expenditures on items that do not fulfill essential requirements.

Despite the rise in prices, there has not been a significant decrease in the overall consumption of food, indicating that the category of organic food products can be categorized as demonstrating characteristics of a superior order. In Poland, household incomes play a far more important role than in Germany.

However, the COVID-19 pandemic has increased health awareness around the world, and some consumers could be more inclined to search for healthier and more sustainable food options, including organic food (Wiśniewska 2022; Żurek 2023).

The attitudes mentioned are corroborated by the findings of research carried out by Buraczyńska, Żelazna, and Bojanowska (2022). The study revealed that during the pandemic, 61% of Polish consumers did not restrict their buying of organic food, with 33% of participants indicating a rise in the consumption of such items. The new social and economic reality is undoubtedly a key determinant of organic food consumption, and it will be examined in the authors' upcoming research.

The primary obstacle encountered during the initial phase of the research was the constrained access to statistical data post-2021, leading to the inability to fully analyze the market situation concurrently with the empirical study. Within the realm of studying consumer behavior, apart from issues related to sample size, a challenge arose in differentiating between consumer-declared behaviors and their actual manifestations in daily life.

The intricate nature of consumer behavior, coupled with the dynamic economic landscape, may contribute to a fragmented understanding of Gen Z consumer behavior.

Nevertheless, consistent monitoring of food market metrics and comprehension of consumer behavior and preferences are imperative for business growth and devising effective strategies and policies to support sustainable development, underscoring the necessity for further advancements in research within this domain.

6. Conclusions and Recommendations

The first two decades of the 21st century have witnessed a rapid increase in the production and consumption of organic food. The EU countries are the leading producers and consumers of organic food. In 2021, organic farmland in the EU accounted for 20% of total agricultural land under organic management in the world; the EU organic market had a 37% share of the global market, and average consumption of organic food was nearly 7-fold higher in the EU than in the world.

However, the analysis of German and Polish organic markets revealed clear differences in organic food trends within the EU. In 2019-2021, the growth of the Polish organic food market was stalled, whereas the German market continued to expand rapidly.

As a result, the German organic market was 51-times larger, and organic food consumption per capita was 24-times higher in Germany than in Poland at the end of the analyzed period.

The results of this study point to clear differences in organic food consumption between the leading Western European markets and Central-Eastern European markets.

The attitudes and behaviors of the surveyed Gen Z consumers of organic food products confirm general trends. Young German consumers are far more eco-conscious than Polish shoppers. These differences are manifested in general consumer behaviors, such as the avoidance of food products in plastic packaging, as well as organic food purchases. Polish Gen Z consumers buy organic food products and products with the ECO label 3-times and 4-times less frequently, respectively, than German youths.

However, when these results are compared with the general trends on the Polish and German markets, it becomes apparent that the surveyed social group is relatively more willing to purchase organic food products. The disparity in disposable housing income between Poland and Germany is undoubtedly an important factor that contributes to differences in organic food consumption.

An analysis of the data for 2020-2021 indicates that the growth of the Polish organic food market was negatively affected by consumer uncertainty during the COVID-19 pandemic. The resulting inflation was yet another economic factor that influenced consumer decisions. However, long-term trends and the EU's organic farming policies suggest that the organic food sector has a high growth potential.

Similar conclusions can be drawn from the survey of Gen Z consumers who are more eco-conscious and open to eco-friendly changes, and whose choices will drive the future development of the organic food market. Due to economic and cultural differences between European countries, organic food markets will grow at different rates, but a similar trend is likely to evolve in the future.

Nonetheless, in view of Common Agricultural Policy goals, legal regulations on food production and consumption in Europe should be modified not only to reduce the environmental footprint of food supply chains, but also to promote non-price determinants of consumer decisions.

The results of this study have important practical implications. Public institutions and market actors should initiate extensive educational campaigns to minimize differences in consumer behaviors and attitudes towards eco-friendly products, and to raise awareness that purchasing decisions affect the health and quality of life of entire societies.

For young consumers belonging to Generation Z, a crucial aspect in their selection of products and services pertains not only to the environmental impact, but also to how these products affect their health and overall well-being. It is imperative that marketing communications by organic food producers highlight these specific

factors distinctly. Given Generation Z's inclination towards online shopping and mobile application usage, the integration of modern tools like distribution channels into the operational framework of food producers on a larger scale appears to be a rational move.

The utilization of in-app sales coupled with delivery or personal pickups for consumers in close proximity to the producers seems particularly justifiable for organic goods with a limited shelf life. The adoption of in-app sales stands to decrease distribution and upkeep expenses for small retail establishments, while offering greater flexibility in executing short-term promotional activities involving clearance of end-of-life products.

However, in assessing the consumer awareness levels between Germany and Poland regarding such solutions, the success of implementing mobile application-based sales in Polish enterprises hinges on the initial investment required to inform consumers about the option of making purchases through this platform.

At the institutional level, it would be beneficial to enhance the implementation of mechanisms supporting the growth of the organic food market by offering various incentives and additional advantages associated with the allocation of agricultural lands for organic cultivation.

This step aims to address existing disparities and alleviate farmers' uncertainties regarding the safety of organic farming, especially those at higher risk due to reduced consumer interest from declining disposable income resulting from inflation, increased food prices, climate change, and future yield decreases.

The evolution of the organic food market may be impacted in the short term by changing conditions in the socio-economic landscape. Events such as the Covid-19 pandemic and the conflict in Ukraine, leading to heightened societal uncertainty, have repercussions on consumer preferences.

Organic food, often perceived as a luxury in less affluent nations, is particularly susceptible to such unforeseen circumstances. Nevertheless, in the long run, enduring trends shaped by European Union policies and ingrained consumer consciousness are expected to foster the gradual advancement of the organic food sector.

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