

## SOCIAL RESPONSIBILITY OF BUSINESS IN THE SHAPING OF FOOD SAFETY QUALITY

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**Purpose:** The aim of the study is to raise awareness among stakeholders of the impact of corporate social responsibility on the development of food safety quality.

**Design/methodology/approach:** The study focused, among other things, on the distribution of selected elements of the global food security index measurement indicator in Poland and selected European countries. The focus was on the safety and quality indicator.

**Findings:** The implementation of CSR activities in this state of affairs to ensure food quality and safety in the food chain by market stakeholders does not improve the Quality and Safety index (74.1) or the Global Food Security Index (75.5). There is a continuous downward trend in the BS index, and in the GFSI it stabilizes at the level of 75.

**Research limitations/implications:** A new study should be conducted, supplementing the data with the results of entities from individual stages of the food chain “from farm to table” with particular emphasis on rural areas. It would be worthwhile to conduct an analysis broken down by province.

**Social implications:** The development and expansion of the capabilities of food industry entities, including through improving the quality and safety of food production, contributes to improving the image and quality of life of society. Implementing CSR activities brings tangible benefits to market stakeholders.

**Originality/value:** The article highlights the poor effectiveness of policies and measures aimed at improving food security in Poland. This applies to both the government and all entities in the food chain.

**Keywords:** Safety, quality, food security, corporate social responsibility.

**Category of the paper:** Research paper.

### 1. Introduction

The activities carried out by food processing entities as part of corporate social responsibility (CSR) are part of a country's food vision and policy. The quality and safety of food offered by entities, as well as declared by the government, are elements of a complex global food production system. Ensuring benefits for all market stakeholders, whether

economic, social, or environmental, requires a significant effort from all entities in the food chain, as well as from consumers themselves. The impact of atmospheric, geopolitical, and economic changes affects changes in agricultural production, the provision of adequate supply chains, and production potential, increasing the level of risk in food processing activities that guarantee food security and sustainable development. As part of their CSR activities, companies are trying to implement changes based on a systematic approach to quality improvement, guaranteeing the minimization of risks of non-compliance, bacterial hazards, or product compliance risks, in order to meet consumer expectations and requirements. Agricultural entities (farmers) are also striving to modernize and properly manage agricultural production so that products are of the highest quality and safety for consumption (processing). All government measures to strengthen production capacity are intended to increase the resilience of the food sector, despite emerging new challenges, threats, and constraints, both in environmental terms (investments in new green technologies, renewable energy sources, etc.), financial (preferential financing, subsidies, and other types of aid) or political (in line with EU policy).

CSR practices and research (in this area) indicate that all these measures are aimed at increasing external, internal, and environmental responsibility as perceived through the prism of food safety awareness identified by various indicators. One of the main indicators determining the state of food security in a given country is the Global Food Security Index. Its complex structure, which assesses various aspects of nutrition in the broad sense, and its annual update provide an overview of the degree to which pro-nutrition tasks are being implemented. Scientific publications most often identify factors threatening food security (Wiśniewska, 2024; Adamczyk, 2019; Muresan et al., 2020; Saha, Manickavasagan, 2021) or condemn actions that minimize the risk of these threats (Agus et al., 2020; Awuchi, 2023; Maziarz 2019; Purwanto et al., 2020), limiting the demonstration of correlations between food safety assessment indices. This results in a research gap that is worth exploring, as CSR activities adopted in contemporary business and food industry enterprises have a significant impact on shaping food safety.

Therefore, for research purposes, the main hypothesis was formulated: (H1) an increase in actions taken to ensure food safety translates into an increase in the global food security index in a given country. Conducting research in this area was also intended to help prove the auxiliary hypothesis (H2): growing awareness and application of CSR does not always translate into systemic support from the state. These research hypotheses emphasize the importance of measures implemented in the country to increase national food security. To this end, in order to reduce the negative impact and minimize the risk of threats in the food industry and in all links of the food chain, stakeholders (entities) must implement tools and good practices that increase the quality and safety of food. My research presented in the article is part of a long-standing discussion on the importance of quality and safety in food (Rudnicka, 2012; Filek, 2013), therefore the aim of the publication is to raise stakeholder awareness of the impact of corporate social responsibility on the development of food safety quality.

## 2. The essence of corporate social responsibility

Dynamic changes taking place on the market resulting, among other things, from globalization, growing consumer awareness among market participants, the development of national economies and economic entities both domestically and internationally, as well as noticeable changes related to the deterioration of the natural environment and relations between countries, leading to an increase in conflicts, including armed conflicts (geopolitical changes), have forced the implementation of responsible policies based on social considerations. Increasingly, the effects and consequences of decisions made as a result of management practices are causing economic entities to view favorably and implement the idea of responsible business, particularly in the food industry. Corporate Social Responsibility (CSR) is popular among entities focused on social, environmental, and economic balance, taking into account the needs and expectations of stakeholders (Rudnicka, 2012; Filek, 2013).

Social responsibility is a term used in business that is defined and presented in various ways, but is focused on multi-level responsible business conduct integrated with management processes in the company (Cochran, 2007). In the evolution of this concept, the initial focus was on working conditions and commitments to human capital (Adamczyk, 2009). Subsequently, emphasis began to be placed on the ethical conduct of organizations, i.e., business ethics. This is particularly important in the food industry, where food adulteration is a negative phenomenon. A. Smith stated that an individual operating in a competitive market who strives to achieve personal utility in a legal and moral manner also unconsciously fulfills certain social goals, which ultimately shapes the perception of ethical behavior (Dołęgowski, 2005). The European Commission points out that CSR is the voluntary integration of both environmental and social values into an organization's activities (EC, 2001). Other definitions refer to CSR only as an element that helps to achieve economic goals and point to the need to maintain good relations with those stakeholders who may influence the company's performance (Rudnicka, 2012). Still other definitions state that CSR is a way of generating profits and strengthening a company's market position, providing added value for stakeholders (MFIPR, 2020; Dymowski, Szymańska, 2009; Bartkowiak, 2011) by improving the quality of life in social and economic terms (Bratkowski, 2020; Navarro, 1988). In other words, corporate social responsibility is a concept of managing an entity that focuses on the individual, the environment, and market stakeholders, in line with ethical and philanthropic attitudes, compliance with the law, and the principle of maximizing value, including economic value. This definition means that the main objectives of CSR are moral, institutional, and organizational. CSR practices among companies indicate that (Kazojć, 2010) from the point of view of food safety, areas of internal responsibility related to production, products, employees, and improving their quality of life, as well as environmental responsibility (Rok, 2008; Wyszomirski, Olkiewicz, 2020), including a focus on good practices and pro-

environmental activities that reduce the risk of environmental degradation, are becoming very important. The third type, external responsibility (Julewicz, Ejdys, 2009), is important from a business perspective, as it concerns marketing, sponsorship, support for entrepreneurship, education, culture, and the arts for the local community and region.

Corporate social responsibility in food industry companies is a management concept that represents an organization's response to the expectations of sustainable development strategies in all areas of social life (Czernyszewicz, Wiśniewska, 2024). Combining various areas, directions, and objectives of business management, it focuses on the importance of quality and the elements that identify it in the context of food safety.

### **3. Quality in the food industry**

Quality is not clearly defined. However, it is focused on identifying certain characteristics of a product or service and their individual elements that are consistent with the intentions or expectations of satisfying the needs of market stakeholders (Wiśniewska, 2025; Grębowiec, 2015). The perception of quality (Hamrol, 2013) depends on the degree to which needs are met. This means that economic operators take all measures to shape quality, incurring costs to improve various areas of the organization, including: the subject of activity (goods, products, services, processed raw materials), characteristics of the subject of activity (durability, diversity, cost-effectiveness, functionality, compliance), method of execution (efficiency, processes, technologies, procedures), sales, and R&D (Kumar et al., 2016; Adamczyk, 2019; Jeżewska-Zychowicz, 2014). Therefore, researchers in the literature on the subject indicate that quality should be perceived in technical, economic, and statistical terms, focused on customer needs and satisfaction (Myszewski, 2009; Saleem et al., 2015; Rimawan et al., 2017). Economic entities, including those in the food industry, strive to create an appropriate quality standard for a product or service and ways to maintain it (repeatability, standards) (Pawlak-Lemańska, 2019; Cyran, 2014). In the food industry, the term “food quality” refers to food performance that meets customer expectations and needs and shapes satisfaction (Leo et al., 2021; Saha, Manickavasagan, 2021). It is worth noting that the term quality also refers to other elements, such as raw materials, goods, food products, and technological processes. In particular, it refers to areas that meet specific standards (norms) for specific groups of factors characterizing a given product, e.g., organoleptic characteristics, physicochemical properties, nutritional values, or labeling. This is particularly important because the changing environment poses new threats to the food chain. Consumers are sometimes exposed to, for example, chemical compounds (with varying degrees of contamination) found in food, as they are not always aware of what food products may contain. Among the chemical hazards, the most common are those that are commonly found in the environment (heavy metals, pesticide residues, dioxins,

polychlorinated biphenyls, polycyclic aromatic hydrocarbons) and those whose presence in food can be avoided or reduced to an acceptable level through the use of food safety systems (medicines, plant protection products, technical aids and preservatives, substances resulting from improper food storage or processing technologies) (Olkiewicz, Wolniak, 2018).

It is important that the product can be characterized as safe for health, increasingly based on environmental (ecological) parameters, which shape purchasing preferences and a healthy lifestyle (Petrescu et al., 2020). Food industry entities perceive and analyze food quality in terms of health safety (confirmed by relevant institutions, e.g., the Sanitary Inspection or Veterinary Inspection) and economic aspects (cost-effective production ensuring customer satisfaction and increased market share). The entire food chain process (“from farm to table”) must comply with food law articles in terms of safety and meet the quality characteristics of products and services while satisfying customer needs and expectations (Sikora, 2010). This means that the simultaneous creation, maintenance, and improvement of the quality level of a food industry company is necessary and achievable thanks to, among other things, appropriate standards, implemented measures (Kowalczyk, Kwasek, 2020) and quality management systems (Łuczka-Bakuła, 2012).

Food industry entities, in compliance with the law, operate in accordance with, among others, the food code (CODEX ALIMENTARIUS), also adopted by the Chief Sanitary Inspectorate, which contains accepted international food standards, as well as recommendations and guidelines. Growing and new threats mean that, in the context of food safety, the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO), as the Codex Alimentarius Commission, are proposing changes to the provisions. The Code is the foundation for other food safety standards such as HACCP, ISO 22000, BRC, and IFS.

HACCP is a control system (Mortimore, Wallace, 2013) designed to ensure the safety and quality of food products by identifying chemical, microbiological, and physical health hazards that may occur during production. HACCP covers the manufacturing process, in which it identifies, analyzes, eliminates, or reduces the risk of critical factors that may affect food safety, for example, in the area of bacterial pathogens (*Escherichia coli*, *Listeria*, *Salmonella*, etc.), viral pathogens (*hepatitis A*, *rotavirus*, etc.), parasitic pathogens (*Cryptosporidium*, *Entamoeba histolytica*, *Trichinella*, etc.), toxic microbial metabolites (*mycotoxins*), etc. (Awuchi, 2023). This system covers all stages of production (Kotsanopoulos, Arvanitoyannis, 2017), i.e., from raw material input, through processing, to product output (Muresan et al., 2020; Maziarz, 2019), to ensure food safety and health protection, as well as to prevent the possibility of foodborne disease outbreaks. This international standard provides the foundation for other instruments to ensure food safety. One of them is the ISO 22000 international food safety management system. This system complies with ISO 22000:2018, which sets out the path that an organization must follow to ensure and guarantee food safety, referring to both the food code and the HACCP safety system (Gil et al., 2017; Segovia et al., 2014).

The scope of the management system covers the entire organization, not just the production (process) area, which guarantees the possibility of adapting both the infrastructure of the organization (warehouses, production, etc.) and personnel (increasing employee awareness and responsibility, improving qualifications, hiring specialists, etc.) to the requirements of the standard as well as business (increasing sales opportunities by gaining trust in the safe product offered, minimizing costs, etc.). The ISO 22000 standard is dedicated to entities in the food chain that can jointly ensure the effectiveness of the food safety system (if all organizations in the chain have and comply with the standard), guaranteeing the integrity of the chain “from farm to table.” Otherwise, the guarantees apply only to a single entity. ISO 22000 is an international standard for food safety management systems that combines the requirements of good practices, HACCP, and the structure of the ISO 9001 standard (management system), providing integrity and ensuring food safety for all links in the food production chain. The ISO 22000:2018 standard focuses, among other things (Purwanto et al., 2020), on the need and obligation to control food safety hazards, becoming an important tool for monitoring the safety of the entire food chain in food industry companies. It should be noted that the system itself is not effective and efficient without adequate commitment to the production of food that is healthy and safe for human life and the acceptance of stakeholders, as factors such as human factors, organizational policy (often correlating with the direction of the country's development), and corporate awareness (in all areas of activity) determine the impact of the food production hygiene environment, food traceability, and the use of labeling (Wiśniewska, 2024). The pursuit of the desired health quality is possible, among other things, through the implementation and improvement of management systems and the organization's compliance with specific requirements, expectations, and standards, e.g., from the ISO or BRC (British Retail Consortium) and/or IFS (International Featured Standards), the application of which will increase its economic and image sphere (Agus et al., 2020; Weyandt et al., 2011; Dzwolak, 2011) as a responsible entity.

#### **4. Research methodology**

The aim of the study was to show the distribution of selected elements of the Global Food Security Index (GFSI) resulting from responsible decisions and actions in Poland and selected European countries. For this purpose, a main hypothesis (H1) and a secondary hypothesis (H2) were formulated:

- H1 – an increase in actions taken to ensure food safety translates into an increase in the global food security index in a given country,
- H2 – growing awareness and application of CSR does not always translate into systemic support from the state.

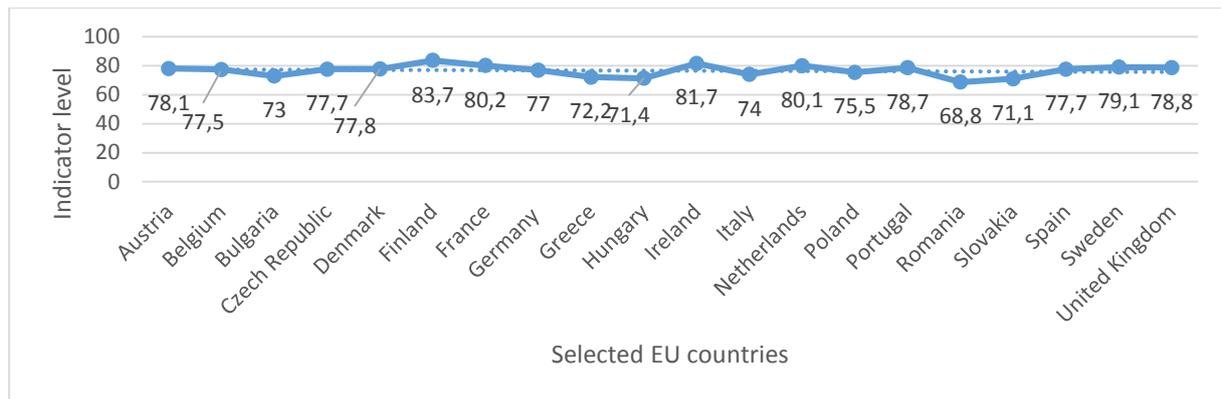
It should be noted that GFSI is an index that comprehensively examines food security in various countries around the world. GFSI consists of a set of indicators and measures food security in most countries around the world, i.e., 113 countries. The index was first published in 2012 and is managed and updated annually by The Economist's analytics department and supported by Corteva Agriscience (a publicly traded company operating in the broadly defined agricultural sector, offering innovations and innovative solutions to global agricultural challenges). Economist Impact is responsible for all content of the index, in particular the methodological and analytical part. The index itself is a dynamic quantitative and qualitative comparative model, built on the basis of 38 unique indicators that measure food security factors in countries in specific areas. The GFSI measures food security compliance in four categories: Affordability, Availability, Quality and Safety, and Sustainability and Adaptation. My study focused exclusively on analyzing variables from the Quality & Safety subgroup, as this group includes variable parameters corresponding to CSR (market stakeholders), e.g.: developing appropriate food safety regulations, food safety mechanisms, the possibility of safe food storage, a national nutrition plan or strategy, food labeling in terms of nutritional value, nutritional monitoring and supervision, and national nutritional guidelines.

The analysis of individual subgroups and their Quality & Safety variable categories, also in relation to selected European countries, allowed us to verify the hypotheses. The verification was carried out as part of a comparative analysis of data from 2012-2022, and trends were identified. The selection of European countries for comparative analysis with Poland was made deliberately, i.e., countries with the highest GFSI index and middle-ranking countries, as well as the Visegrad Group countries, were selected. The study included twenty countries: Bulgaria, the Czech Republic, Spain, Sweden, Slovakia, the United Kingdom, France, Germany, Greece, Hungary, Ireland, Denmark, Finland, Italy, the Netherlands, Austria, Belgium, Poland, Portugal, and Romania. It should be noted that the selected countries also had to show significant volatility in the index between 2012 and 2022.

## 5. Results and discussion

The responsible actions taken by market stakeholders in individual European countries aimed at food safety quality are reflected in the Global Food Security Index in 2022 (Fig. 1).

The data presented in the chart shows that the distribution among individual European countries is uneven, with all countries except Romania achieving a score above 70%. Poland ranks 21st among the 113 countries surveyed, with a score of 75.5%.



**Figure 1.** Global Food Security Index in 2022 (scoring).

Source: own work based on: <https://impact.economist.com/sustainability/project/food-security-index/>

This indicates that food security in Poland and the countries presented is at a very good (80+) and good (70-79.9) level. Only Romania achieved an average level. It is worth noting that all countries covered by the index have shaped their current level over many years through various activities in the area of food security. The evolution of the Global Food Security Index has been variable, as shown in Table 1. Although the trend is upward, there are periods of decline (in 2015, 2018, and 2020) and stability in 2021.

**Table 1.**

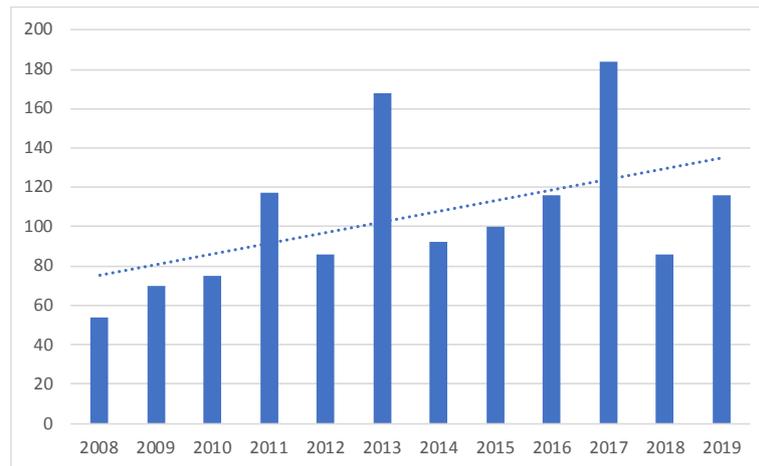
*Global Food Security Index in Poland (scoring)*

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Poland	68,5	71,3	72,3	71,5	72,9	73,2	73,0	75,5	75,0	75,0	75,5

Source: own work based on: <https://impact.economist.com/sustainability/project/food-security-index/>

As shown in Table 1, the rate of growth of the index in Poland is not as fast, as this index comprehensively examines food security. The quality and safety index includes component parameters such as dietary diversity, nutritional standards, micronutrient availability, protein quality, food safety, along with subgroups. The study focused on this parameter of food safety quality assurance.

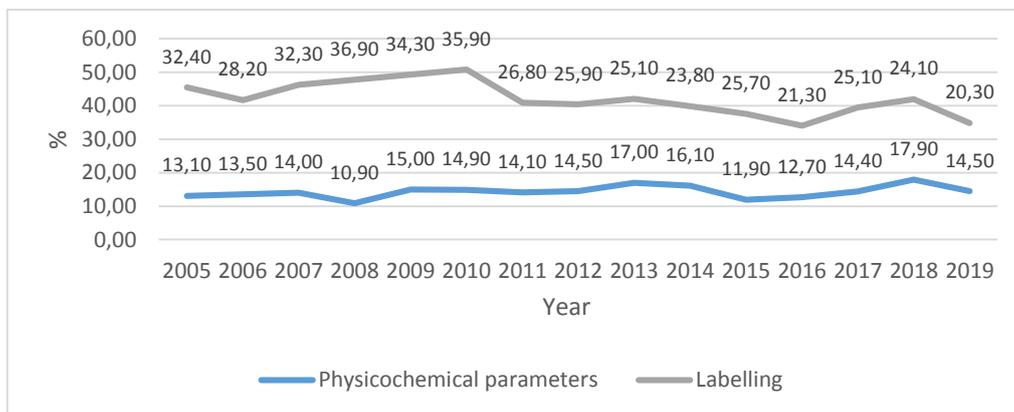
The changes introduced, both systemic and strategic, tactical, and operational in food industry enterprises, required time and appropriate resources, as well as an appropriate action strategy. This was particularly true given that between 2008 and 2019, the number of annual notifications to the RASFF (Rapid Alert System for Food and Feed) about food “falsification/fraud” increased in Europe (Fig. 2).



**Figure 2.** Number of cases of adulteration/fraud reported to RASFF.

Source: Hellberg et al., 2021.

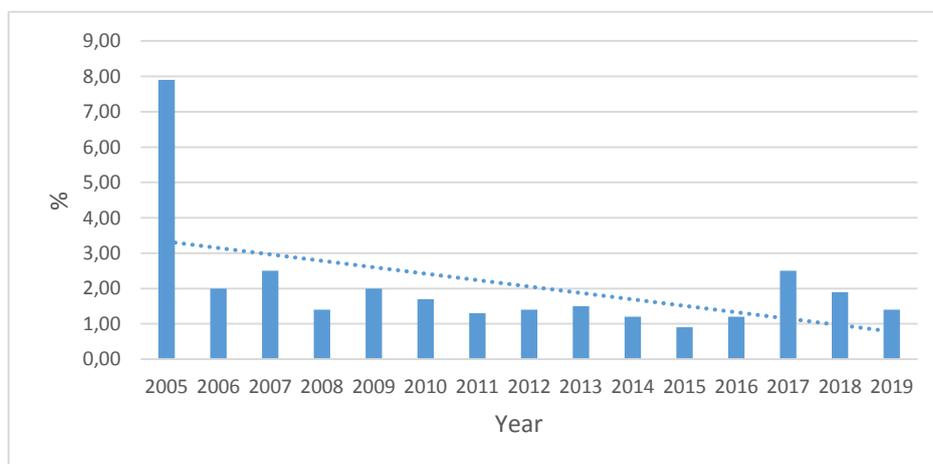
In Poland, this trend was declining (Fig 3), as confirmed by the results of physicochemical tests of food products and labeling. A similar trend was observed in organoleptic tests.



**Figure 3.** Ratio of food products tested to irregularities found in the area of quality.

Source: own work based on: (Kowalczyk, Kwasek, 2020).

A similar trend was observed in organoleptic tests (Fig. 4).



**Figure 4.** Ratio of food products tested to irregularities found in organoleptic tests.

Source: own work based on: Kowalczyk, Kwasek, 2020.

Analysis of the data from Fig. Xi Y indicates that ensuring the quality and health safety of food production has become a fundamental objective of state authorities, but also of entities in the food chain. To ensure food safety and the quality of food production, governments have established various institutions to control food and the way it is produced. In Poland, these include the State Sanitary Inspection (PIS), the Veterinary Inspection (IW), the Agricultural and Food Quality Inspection (IJHARS), the Trade Inspection (IH), the State Plant Health and Seed Inspection Service, and the Environmental Protection Inspection. Thanks to these organizations, among others, countries, including Poland, have been able to develop nutrition programs and strategies and set national nutrition guidelines (Tab. 2). Development in this area is presented by the composite indicators of the quality and safety parameter of the Global Food Security Index, confirming hypothesis 2.

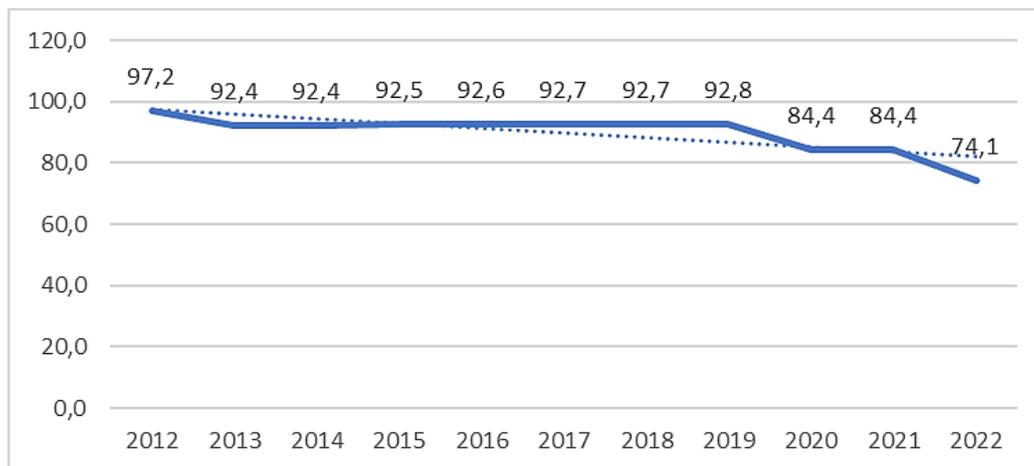
**Table 2.**

*Evolution of the variability of nutritional standards indicator parameters (scoring)*

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
National dietary guidelines	0,0	0,0	0,0	0,0	50,0	50,0	50,0	50,0	100,0	100,0	100,0
National nutrition plan or strategy	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Source: own work based on: <https://impact.economist.com/sustainability/project/food-security-index/>.

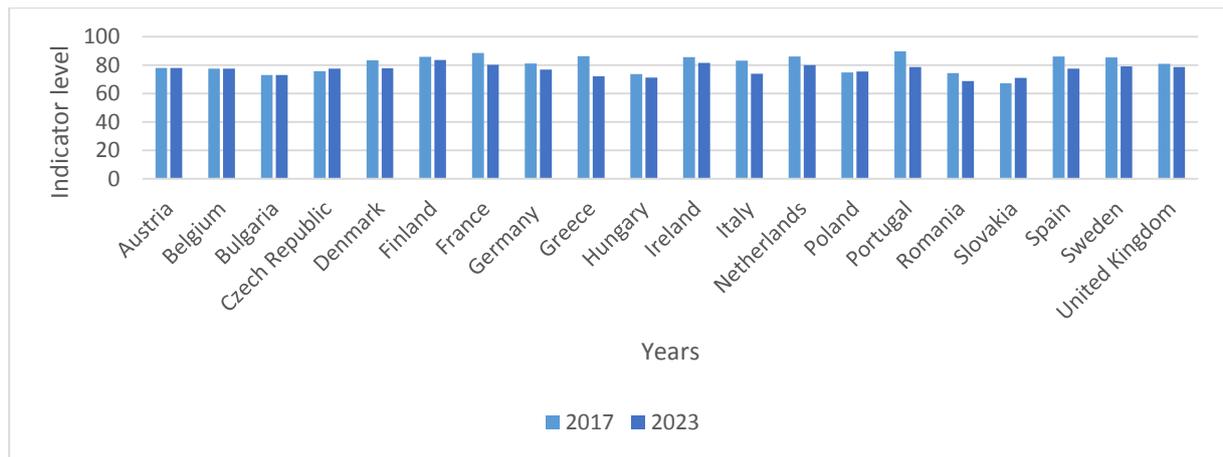
An important assessment parameter is the food safety index. Although it is on a downward trend in Poland (Fig. 5), it still remains at a high level.



**Figure 5.** Food safety index in Poland (scoring).

Source: own work based on: <https://impact.economist.com/sustainability/project/food-security-index/>

It is worth noting that the downward trend is visible in almost all of the countries presented (Fig. 6), which may indicate that changes resulting from globalization, increasing urbanization, and expectations and needs have significantly determined the quality and safety index.

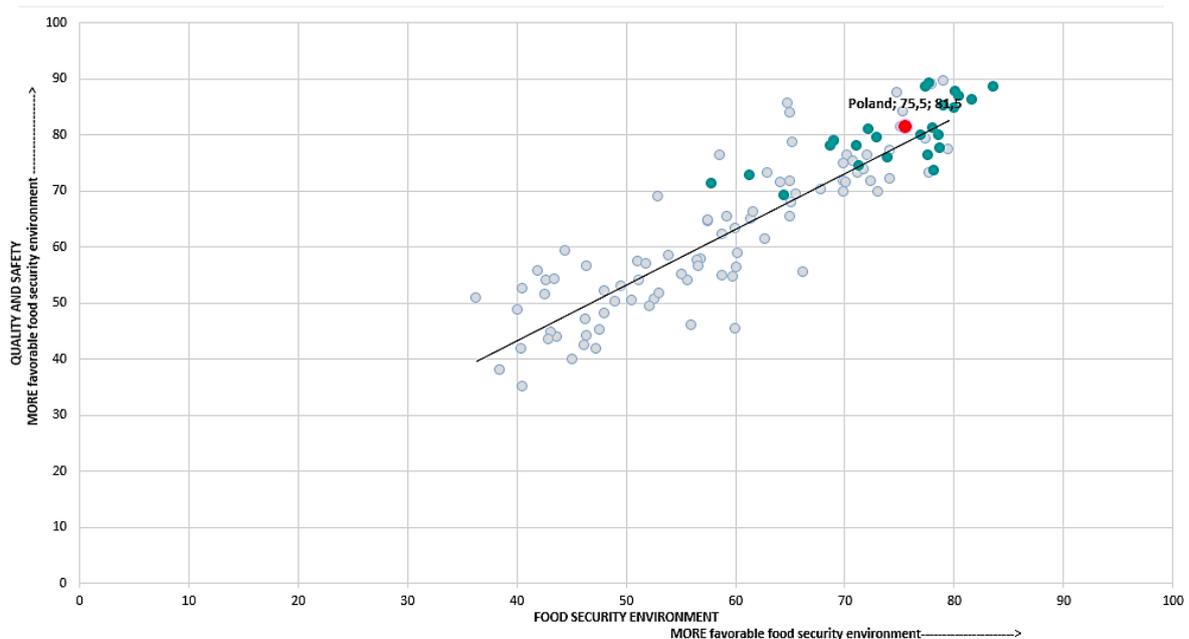


**Figure 6.** Comparison of food safety indicators in the analyzed countries in 2017 and 2023 (scoring).

Source: own work based on: <https://impact.economist.com/sustainability/project/food-security-index/>

This parameter, together with the variables that shape it, indicates that entities supporting the implementation of food safety policy play an important role in Poland. This applies to both the creation of an appropriate legal framework through mechanisms ensuring food safety and the logistical capabilities related to food storage standards. Responsible management (CSR) is intended to support decision-makers in implementing multidimensional measures that guarantee the safe operation and development of all entities in the food chain and consumers themselves.

Although the analysis of the dependent variables of individual indicators shows increasing and decreasing trends (in the period under review), which affects the variable level of the main indicators of quality and safety, Poland still ranks high in comparison with other countries in the Global Food Security Index, as shown in Fig. 7, confirming hypothesis 1.



**Figure 7.** Poland's position compared to the analyzed countries.

Source: own work based on: <https://impact.economist.com/sustainability/project/food-security-index/>

Poland's position in the distribution of other European countries indicates that there are countries with higher rankings, and by increasing our efforts (energy) to improve safety and quality in specific areas, we could improve our position. Analyzing historical data, we can conclude that despite the fluctuating distribution of the safety and quality index in Poland, the GFSI index remains firmly established at 75.

## 6. Summary

The aim of the study was to raise awareness among stakeholders about the impact of corporate social responsibility on the development of food safety quality. The study aimed to demonstrate that food quality and safety are an integral part of corporate social responsibility activities aimed at ensuring food safety. The identifying parameter for food safety is perceived by the level of the Global Food Security Index in a given country. The study showed that this index in Poland has been growing steadily since 2012, stabilizing at 75.0-75.5 in the period 2019-2022. This is a good level, but unfortunately the elements that shape it do not have such a stable trend. An example is the quality and safety parameter. This parameter in Poland was 97.2 in 2012 and will be 74.1 in 2022. This means that in the case of the quality and safety index, the trend is declining. It should be noted that this situation also occurred in almost all of the 20 European countries compared. This is undoubtedly key information for market stakeholders to take action in specific areas of the food chain to halt this trend and reverse it.

By stepping up CRS activities, all stakeholders in the food chain will be able to feel safe, both in the process of manufacturing and processing raw materials into finished products, and during their consumption. Ensuring quality and safety, e.g., at the production stage, without food adulteration, is a challenge for any organization, given the rapidly changing expectations and requirements of customers. The results of the study confirmed the hypotheses and the objective of the study was achieved.

However, the research has certain limitations, as the lack of data prevented a deeper and broader analysis of the food market in Poland, a comparative analysis of regions (provinces), and a broader identification of CSR activities. It would therefore be worthwhile to conduct such an analysis in the future using a questionnaire (albeit in a single region), which would increase the contribution to the discipline of management and quality sciences. Nevertheless, it should be noted that the growing awareness of market stakeholders and changes introduced by government organizations dealing with food safety are prompting food industry organizations to implement and improve quality management systems, building consumer confidence in high-quality products, minimizing the risk of microbiological, physical, and chemical contamination of the product, and ensuring the reliability of labeling. Therefore, it is important that entities

operating in the free market act in accordance with the idea of responsible business, which in the long term will bring significant benefits in all areas of the company's operations in the food chain.

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