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MODELLING SUSTAINABLE MARKETING ACTIVITIES OF FOOD COMPANIES OPERATING ON THE POLISH MARKET

ABSTRACT

Progressive environmental degradation is forcing changes in the behavior of food companies, including in terms of product, pricing, distribution, and promotion. Modeling the identified marketing mix elements toward more sustainable activities is no easy task.

The aim of this research was to determine the degree to which food companies engage in marketing modeling toward sustainable marketing activities. Empirical research determined the degree to which food companies engage in marketing modeling in the context of sustainable development. The research findings indicate that modeling sustainable marketing activities, including the sustainability of food products, is selective and not fully implemented in the surveyed companies. The global Yglo development index achieved is low, indicating the need for food companies to further engage in activities aimed at improving the index's effectiveness towards more sustainable marketing activities.

The issue of modeling sustainable marketing in the food market requires in-depth research at both the theoretical and empirical levels. This is also a new and not fully understood issue among managers. Food companies should strive to balance their organizations' economic goals with environmental and social objectives by implementing sustainable development principles.

KEYWORDS: *sustainability, sustainable marketing, food company, Polish market, natural environment*

INTRODUCTION

The ongoing changes in the economic environment of food companies in the economic, demographic, technical-technological and, above all, socio-environmental areas are changing the behavioural attitudes of food buyers and food companies themselves (Trojanowski, 2022a, p. 4893-4905).

The modelling of food enterprises towards balancing their business activities and the shaping of consumer behaviour in the food market is particularly noticeable in the decision-making processes for the purchase of consumer goods. Purchasers of food products are making increasingly thoughtful and conscious purchases. Among the numerous criteria that consumers take into account when making a purchasing decision is the quality of the manufactured products, here the raw material composition, the price of the product, the availability of the product at the point of sale, as well as the sustainability

of the production of consumer goods, which is increasingly important from the buyers' point of view (Govindan, 2018 p. 419-431).

Current trends on the contemporary food market in terms of production, distribution, product packaging, marketing and sales activities and, above all, consumption, provide ample opportunities for entities operating in the area of food markets to influence numerous groups of consumers. In addition to production companies involved in food production and companies involved in distribution and sales, there are also various types of entities that break into sales forecasting, warehouse and logistics management, modelling customers' purchasing attitudes or creating future trends in food consumption (Lamm, 2023).

From this point of view, there is therefore a need to deepen the state of knowledge of the subject in both the theoretical and empirical layers. Conducting empirical research involves defining the aim of the research as well as the research hypotheses. The aim of the research was to determine the extent to which the marketing activities carried out by food companies are modelled towards sustainable marketing activities. In addition to defining the research objective, two research hypotheses were formulated. The first hypothesis assumes that food industry companies operating on the Polish market direct their marketing activities toward the implementation of sustainable marketing principles. The second research hypothesis assumes that the measures undertaken to implement sustainable marketing are selective in nature and are not carried out in a comprehensive manner.

The achievement of the research goal and the verification of the research hypotheses will be achieved as a result of the empirical research conducted later in the article.

RESEARCH METHODS

Own research conducted in food industry enterprises operating on the Polish market made it possible to collect empirical material on the basis of which further analyses were conducted. The persons participating in the study, to whom the research questionnaire was addressed, were employees with relevant knowledge and competences in the subject of the study, mainly middle and high-level managers responsible for marketing activities of their enterprises.

Completing the research process is the definition of the research methods and tools to be used in the implementation of the research study. The research study used the CATI (Computer Assisted Telephone Interview) method, i.e. a computer-assisted telephone interview, and the CAWI (Computer Assisted Web Interview), in which the respondent was asked to provide answers. The research was conducted on a randomly selected sample of 223 companies operating in the food sector. The database was purchased from a professional research firm. Ultimately, 74 companies operating in the food sector participated in the study. The structure of the surveyed enterprises by size indicates that 12 companies (16,2%) were small enterprises, 42 companies (56,8%) were medium-sized enterprises, and 20 companies (27%) were large enterprises employing more than 250 people.

An important part of the research process is also the appropriate selection of research tools with which information will be obtained. The research used an electronic survey questionnaire, which was prepared in a web-based application. The questionnaire contained a set of structured questions relating to the subject of the research and metric questions. The use of the Likert scale (Likert, 1932, p. 5-55) was a helpful measure in obtaining responses.

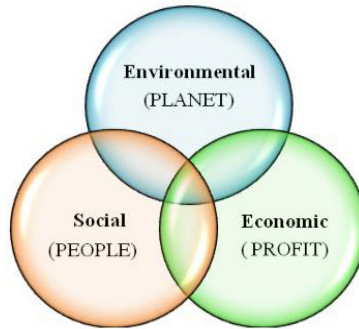
THE CONCEPT OF SUSTAINABLE DEVELOPMENT

The progressive degradation of the natural environment and the deteriorating quality of life of societies, mainly in Africa and poor parts of Asia and South America, have led to discussions on improving the environment and the condition of societies (Neimark, et al. 2020, p. 496-515; Souza, et al. 2020, p. 179-201). The environment is mainly affected by heavy industry and mining, but it should also be pointed out that other types of industry, such as the food industry, also contribute to a weakening of the environment and people's quality of life. Due to the existing threats in the environmental and social environment, there is a need to minimise or completely stop the negative trends occurring in various industries (Kazibudzki & Trojanowski, 2020; Kazibudzki & Trojanowski, 2024).

A tool in the fight for a clean environment and increased quality of life for societies is sustainable development. At the end of the 1980s, a report was presented entitled as: *Our Common Future*, which described the concept and

meaning of sustainable development as *Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs* (The Report of the World Commission on Environment and Development, 1987, p. 47). The presentation of the report marked the beginning of a change in the attitude of national governments, politicians, social and environmental organisations, owners of large corporations, managers and rank-and-file employees, and consumers themselves, towards the protection of the environment and the impact of its degradation on people's standard of living and the fate of the Earth. The concept of sustainable development, which preaches protection of the environment and respect for social values, still points to the need to take care of the Earth's natural resources in such a way that future generations are not deprived of the chance to develop even better than the present ones, and even calls for increasing these chances (Bocken, et al. 2015, p. 67-81; Kucęba, et al. 2023, p. 4235–4244).

With regard to manufacturing and trading companies, whose main objective is to grow, increase profits and market share, the concept of sustainability puts forward the proposal of balancing the economic objectives of the company with environmental and social objectives. The literature on balancing the three objectives (environmental, social and economic) presents the Triple Bottom Line (TBL) concept, which aims to reconcile environmental, social and economic objectives in such a way that companies achieve their financial goals while respecting the environment and the interests of societies (Trojanowski, 2020b, p. 1296-1302; Muñoz-Pascual, et al. 2019, Shou, et al. 2019; Longoni, A. & Cagliano, R., 2018, p. 1097–1120; Glavas & Mish, 2015, p. 623–642). Figure 1 shows the TBL concept in graphical form.

Figure 1. *Triple Bottom Line*

Source: Own elaboration.

Sustainability, due to its versatility, can be successfully implemented in different areas of business, such as in the marketing of food companies.

SUSTAINABLE MARKETING OF FOOD BUSINESSES

The marketing activities undertaken by managers of food companies are aimed at guaranteeing a satisfactory level of product sales while strengthening the company's market position. With the changing situation in consumer markets in favour of environmental protection and improved quality of life for consumers, managers are increasingly taking marketing measures to adapt to the principles of sustainable development. In view of the changes taking place in production and trading companies, including those in the food sector, it is possible to observe marketing activities that are increasingly geared towards environmental and consumer protection. Such behaviour can be referred to as sustainable business marketing.

In the literature, sustainable marketing has been defined by various authors (Belz, 2005, p. 21-26; Fuller, 1999, p. 36-40; Martin & Schouten, 2012, p.19-22; Kadirov, 2010, p.16-24; Peattie & Belz, 2010, p. 8-15). Sustainable marketing is a sub-area of sustainable management, which aims not only to provide financial, but also environmental and social benefits to the organisation (Kemper, 2019). Deepening the consideration of sustainable marketing, it should be pointed out that an important role in the creation of this concept is played by the elements

of the sustainable marketing mix, namely the product, price, distribution and promotion mix (Trojanowski & Kazibudzki, 2021; Pomeroy & Johnson, 2018; Lim, 2016, p. 232–249; Möller, 2006, p. 439-450).

The implementation of sustainable marketing by food companies in line with the concept of sustainable development may cause some controversy. On the one hand, sustainable marketing calls for a reduction in the consumption of food products, and thus also a reduction in harmful emissions, a reduction in the demand for various types of fuel, water, gases, minimising waste from production processes, packaging, etc., while on the other hand, it is a driving force for a food company whose main objective is to earn money from the sale of products and increase market shares. There is a clear contradiction here, which forms the basis for further discussion of this important and yet difficult to reconcile issue (Trojanowski, 2020b, p. 1296-1302).

ANALYSIS RESULTS

In the course of the study, research material was collected and statistically analysed. Statistical tests used the formula proposed by (Hellwig, 1968, p. 307-327; Namyslak, 2015, p. 36-51):

$$mi=1-\frac{di0}{d0} \quad (1)$$

Where:

mi – a measure of development for the i -th object,

$d0$ – is calculated using the following formula:

$$d_0 = d_{0sr} + 2S_0 \quad (2)$$

Where:

d_{0sr} and S_0 – the respective arithmetic mean and standard deviation of the previously calculated distances from the standard.

The measure of development is a normalised quantity and generally takes values in the range $[0;1]$ (with the exception of objects that are significant

outliers – here it can be negative). In this case, the higher the value, the higher the development level of the individual.

The research conducted in food industry companies provided empirical data to determine the degree of modelling of sustainable marketing activities. To assess the degree of modelling, a development index was proposed: $Q1$, $Q2$, $Q3...Q12$ based on the distance from the model. Based on the research, 12 development indicators of the degree of modelling of sustainable marketing activities were determined and are presented in Table 1.

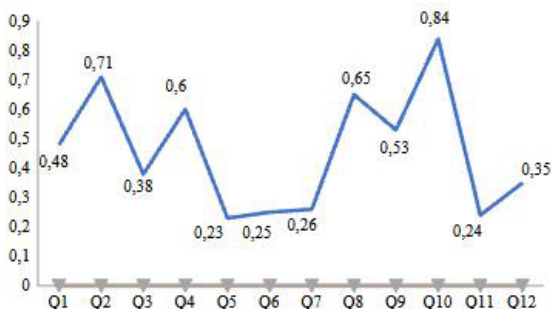
Table 1. *Indicators of the degree of modelling of sustainable marketing activities of food companies*

$Q1$	$Q2$	$Q3$
The company creates products that are characterised by high quality and low environmental and social impact	Production processes reduce the use of water, energy, gas, fuels and other raw materials needed for production	In the production of food packaging, the use of film, paper, plastic and other raw materials is reduced
0,48	0,71	0,38
$Q4$	$Q5$	$Q6$
Prices of products are appropriate to the financial outlay incurred in their manufacture	The company includes the costs of social and environmental activities in the price of its products	The company includes the cost of recycling packaging in its product prices
0,60	0,23	0,25
$Q7$	$Q8$	$Q9$
The company pays particular attention to the environmental and social impact of logistics processes	Company makes maximum use of loading areas to reduce frequency of product deliveries	The company eliminates modes of transport that pose a serious risk to the environment and the public, e.g. (exhaust fumes, noise, poor technical condition of vehicles)
0,26	0,65	0,53
$Q10$	$Q11$	$Q12$
Company creates credible marketing messages, does not use food descriptions that mislead consumers	In its communication with customers, the company seeks to promote sustainable consumption	The content of promotional messages informs consumers about the company's environmental and social activities
0,84	0,24	0,35

Source: own elaboration.

The indicator values in the table represent the degree of modelling of individual sustainability marketing activities. The range of indicators is from 0,23 to 0,84. Figure 2 is provided to better illustrate the results of the study.

Figure 2. Degree of modelling of sustainable marketing activities of food companies



Source: own elaboration.

The analysis of the research results shows that the modelling of marketing towards sustainability takes on different values. Indicators Q5, Q6, Q7 and Q11 do not exceed a development value of more than 0,30. This is a worrying phenomenon that calls for a significant amount of work and a serious commitment from food companies in their efforts to model sustainable marketing activities. The next indicators Q1, Q3, Q9 and Q12 are characterised by a slightly higher degree of development ranging from 0,35 to 0,53. By far the highest degree of development leading to the modelling of sustainable marketing activities of food enterprises is shown by indicators Q2, Q4, Q8 and Q10. The values of these indicators range from 0,60 to 0,84, with indicator Q10 described as: (The company creates credible marketing messages, does not use descriptions of food products that mislead consumers) of 0,84 deserves a distinction.

With the values of the individual indicators in hand, a global Y index was calculated. For the companies involved in the study, the Yglo index = 0,46. The value of the global Y index does not exceed 0,50 and it can be concluded that it is far from the ideal of 1,0. The resulting global sustainable marketing index of 0,46 partially confirms hypothesis H1, as it indicates that companies are undertaking actions consistent with the sustainable marketing concept. At the same time, this

value, significantly deviating from the level of full implementation (1,0), confirms hypothesis H2, indicating that these actions are selective, implemented to varying degrees in individual marketing areas, and do not yet constitute a comprehensive management system consistent with the principles of sustainable marketing.

The research results and analysis achieved indicate that the research hypotheses contained were confirmed.

CONCLUSION

Modelling sustainable marketing activities of food companies is a difficult and time-consuming process. Furthermore, this process requires constant monitoring of trends and phenomena in food markets. Due to their dynamics, consumer goods markets are characterised by volatility and unpredictability, which in turn requires, especially from managers responsible for the fate of the enterprise, a high degree of creativity and the ability to make accurate decisions.

It can also be pointed out that the reason for the lack of satisfactory effect in the pursuit of effective modelling of the marketing activities of food companies towards sustainability may also be the costs associated with transforming conventional marketing into sustainable marketing. For most manufacturing and production and trading organisations, including those in the food sector, the main objective of their business is to make a profit on sales and increase their market share. Therefore, reconciling the triad of environmental, social and financial objectives becomes a difficult or almost impossible task for most companies.

The topic presented in this article does not fully exhaust the existing problem and does not fill the theoretical and cognitive gap. Hence, there is a need to further deepen the knowledge of this important and topical topic in both the theoretical and research layers. Future research in this area, should be characterised by dynamism and inquisitiveness in learning about the phenomena occurring.

This article can be helpful to middle and high-level managers who are planning to undertake sustainable marketing activities in their organisations. Due to the universal nature of the concept of sustainability, of which sustainable marketing is a derivative, these activities can be implemented not only in food companies, but also in other organisations for which the fate of the earth and future generations is important.

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