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Marketing Support of Corporate Social Responsibility of Agri-Food Enterprises

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Abstract. The article considers the peculiarities of marketing support of corporate social responsibility of agri-food enterprises of Ukraine. The purpose of this study is to develop scientific positions to carry out the marketing support concept of corporate social responsibility of agri-food enterprises. Created positions will be directed toward building reliable partnerships with stakeholders. The logical architecture of realization of the concept of marketing support of corporate social responsibility of agri-food enterprises is formalized. The directions of harmonization of interests of business structures (stakeholders) and the state in the marketing support of corporate social responsibility of agri-food enterprises are presented. The graph-model of rational architecture of probabilistic time lag of profitability and competitiveness in the current business process of agri-food enterprises is structured. The three-level vector of realization of marketing programs of corporate social responsibility of the enterprises of agri-food production is defined. Economic indicators and the volume of expenditures on environmental and social aspects of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine are analysed. Factors influencing the sustainable level of marketing support of corporate social responsibility, which increases the motivation and productivity of employees, business, and public reputation of enterprises in the agri-food sector of the economy and reduces the risk of market losses, are substantiated. It is proved that socio-economic development of ethnic communities in the Steppe, Forest-Steppe, Polissia and Western zones of Ukraine in the context of the concept of marketing support of corporate social responsibility is carried out through the implementation of environmental, motivational levers for health protection, education, cultural values, infrastructure and other social projects, that is, by increasing the flow of social investment

Keywords: environmental and social aspects, business reputation, resource component, labour potential, social expenses, business processes



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INTRODUCTION

In present-day global competitive environment, the strategic vector of the agri-food sector of the world economy is the full reproduction of public life based on corporate social responsibility of economic entities, which gain several marketing advantages and occupy important places on the world stage. However, the lack of agri-food enterprises with proper incentives to implement the principles of the concept of marketing support of corporate social responsibility, leads to complete or partial loss of their social activity, lowering the level of business reputation and competitiveness. At the same time, the implementation of the concept of marketing support of corporate social responsibility can be the key to the prosperity of business structures in the economic environment and the effective functioning of the economy in general. In addition, awareness of the need to support a social balance between small, medium, and large businesses in agri-food production requires the development of promising marketing tools that can affect the viability of society not only at the micro level but also globally to provide a multifunctional model of socialization, integration and innovation of subjects the agri-food complex.

The importance of the formation of marketing support for corporate social responsibility was studied by many scientists around the world. For instance, C. Sun *et al.* (2021) found a straight link between core competence and an elevated level of corporate social responsibility. Scientists R. McMurray and A. Pullen (2020) considered corporate governance in the context of such spread social flows as feminism, ecology, and radical politics. S.D. Dmytriyev *et al.* (2021) state that stakeholder theory and CSR ensure separate but complementary theoretical basis with some duplication. V.S. Harrison (2021) studied the ethics of corporate CSR, especially, for non-profit organizations. According to J. Cook *et al.* (2021), specific problems which appear during the marketing model building are the most common reason for the further failure of the practice. In the work written by A.-M. Kennedy and N. Santos (2019) normative recommendations to develop the social fairness of social marketing are presented. X.L. Wang (2022) analysed strategic human resource management, while S.F. Kingma (2018) concentrated attention on the overview of risk, crisis, and emergency management. L. Wu and G.C. Kane (2021), in turn, considered the impact of the implementation of digital management tools on staff productivity. Scientist B.J. Calder (2022) shifted the focus from employees and employers to customers, and deal usage of customer interactions for building a strong brand.

The purpose of this study is the development of innovative provisions for further implementation of the marketing support concept to provide corporate social responsibility for enterprises in an agricultural business area. The mentioned concept has extreme importance for agri-food businesses due to its function of harmonization

long-term partnerships with business structures that are directed at meeting consumer needs. Implementation of corporate social responsibility will help to exert a positive socio-economic influence on the economic environment.

MATERIALS AND METHODS

In the research framework, the following scientific methods were used: a modified method of hierarchy analysis (MAI), method of formalization, and methods of analysis and synthesis. A modified method of hierarchy analysis (MAI) helped to find multi-criteria parameters of the optimization graph model of the probabilistic time lag of profitability and competitiveness of agri-food enterprises. Method of formalization was used to express technical and mathematical thoughts within the topic. Methods of analysis and synthesis helped to gather, consider in detail, and interpret necessary data in the study. The main part of the statistical data in presented figures was generated on the materials from Socio and economic situation of Ukraine (2021) and Competitiveness rating of Ukraine (2021) governmental documents.

Multi-criteria parameters of the optimization graph-model of the probabilistic time lag of profitability and competitiveness of agri-food enterprises are found using a modified method of hierarchy analysis (MAI). To obtain the values of indicative stimulators and disincentives for marketing support of corporate social responsibility of stakeholders, a matrix of pairwise comparisons of components of the resulting value is formed. According to the nonlinear equation, incompatible components are removed from the resulting value and a high-quality architectural model of an alternative time lag of profitability and competitiveness is built in several scenarios. The value of model architecture is reduced to the selection of information, which is structured based on expert assessments and allows figuring out its reliability.

The multi-criteria goal with the resulting set of optimal alternative components that simulates the architecture of stimulators and disincentives for marketing support of corporate social responsibility of business structures is $x^* \in X$, for which the equation is calculated (formula (1)):

$$x^* = \arg \max_{x \in X} \left(-1 + \prod_{j=1}^m (1 + w_{f_j}(x_i)^{w_p(f_j)}) \right),$$

$$w_p(f_j) \geq 0, \sum_{j=1}^m w_p(f_j) = 1, \quad (1)$$

where $w_{f_j}(x_i)$ is the priority of resource components x_i in relation to each criteria parameter; x_i is the optimal alternative to the architecture of the probabilistic time lag of profitability and competitiveness in the business process, $i = \overline{1, n}$; n is the total set of optimal alternatives; f_j are the criteria parameter of the model business process, $i = \overline{1, m}$; m is the general set of criteria parameters; $w_p(f_j)$ is the priority of the j^{th} criteria parameter relative to the target problem p ; p is the goal of the model architecture.

Based on corporate social responsibility, to find the probability of time lag profitability and competitiveness of agri-food enterprises and their

social needs to ethnic communities in a given area, the econometric regression equation is presented (formula (2)):

$$P_i = \left\{ Y_i = 0 \mid Q_{ik} \right\} = 1 - PW_i = 1 - \frac{e^{W_i}}{1 + e^{W_i}},$$

$$W_i = \theta_{i0} + \theta_{i1}Q_{i1} + \dots + \theta_{ik}Q_{ik}$$

$$Y_i = \begin{cases} 1, & \text{if in the study period the social needs of ethnic communities have not been met} \\ 0, & \text{if in the study period the social needs of ethnic communities have been met} \end{cases}, \quad (2)$$

where P_i is the probability of a time lag of profitability and competitiveness of the i^{th} agri-food enterprise to meet social needs, $i = \overline{1, N}$; N is a set of social needs of ethnic communities of a certain area; Y_i is the binary (dichotomous) variable, which determines the probability of time lag of profitability and competitiveness of the i^{th} agri-food enterprise; Q_{ik} is a set of evaluative indicative stimulators and disincentives for profitability and competitiveness of agri-food enterprises, $k = \overline{1, m}$; m is the total number of evaluative indicative stimulators and disincentives; PW_i is the probability of time lag, which forms the loss and low competitiveness of the i^{th} enterprise of agri-food production, $PW_i \in [0; 1]$; e is the basis of natural logarithm; W_i is the amount of profit, thousand USD; θ_{ik} are the parameters of linear regression W .

The amount of cash income from meeting the social needs of ethnic communities in each area is found by formula (3):

$$CF^t = \sum_{i=1}^N P_i^t dz_i^{t-1} + \sum_{g=1}^G D_g^t \quad (3)$$

where CF^t is the probability of a time lag of cash flow at the end of the period t , EUR; t is the time lag, month; dz_i^{t-1} is the amount of cash receipts at the beginning of the estimated time lag t , EUR; D_g^t is the probability of a time lag of receipt of funds from the g^{th} ethnic community at the end of the time lag t , EUR, $g = \overline{1, G}$; G is a set of optimization alternatives.

RESULTS AND DISCUSSION

An overview of marketing support of corporate social responsibility of agri-food enterprises in Ukraine.

The current state of marketing support of corporate social responsibility of agri-food enterprises of Ukraine is characterized by significant imbalances in the globalization space, which with the rapid development of business environment and increased competition in Ukrainian and foreign markets is accompanied by modernization of marketing technologies and marketing processes. Directing goods to consumers and meeting all their needs activates the value of the global form of marketing support, which transforms the locally limited form of corporate social responsibility of agri-food enterprises and with the help of marketing technologies saturates the market with alternative goods and services

for ethnic communities (Alavion *et al.*, 2017). That is, marketing support for corporate social responsibility is an integral part of achieving tactical business in the market of marketing technologies, as well as targeted product policy (Serio, 2022; Abdulgader *et al.*, 2021).

Due to the tactical focus of development, corporate social responsibility gives an opportunity to agri-food businesses to resolve some of the professional tasks and problems. For example, to identify directions and ways for upgrading the socially responsible regulation state nowadays; to identify and assess the issues in labour and social area; to implement the set perspective steps, using the external and internal control systems; to predict the consequences of determining problems for all social partners; to create the ways to implement identified innovations; to choose and assess the most efficient ones. Among the main functions of corporate social responsibility also are the adoption of the social principles in the framework of the corporate governance system to make the regulation of labour relations more successful; building a positive image that is oriented toward providing care for the health and lives of staff and decent labour; implementation of the modern management methods. Corporate social responsibility could help to ensure an essential resource; to provide transparency of information; to provide information accessibility in the way of its proper exchange and building reliable communication with partners; to ensure the active straight link with stakeholders. It should not be forgotten that the agricultural area functions in the conditions of business processes operation (Krishnamurthy *et al.*, 2022; Ma & Sexton, 2021).

Marketing technological approaches of corporate social responsibility distinguish programs for their providing. It is possible through the solving of socially substantial issues by formulation of circumstances for an elevated level of social security and contributing to social unity. In this case, authors are not talking about mandatory compliance with the law, but about the voluntary desire of agri-food enterprises to find a balance between increasing production and ensuring social and environmental development of the agricultural economy. According to this, there is a three-level vector of implementation of marketing programs of corporate social responsibility - social commitment, social response, and social sensitivity (Fig. 1).

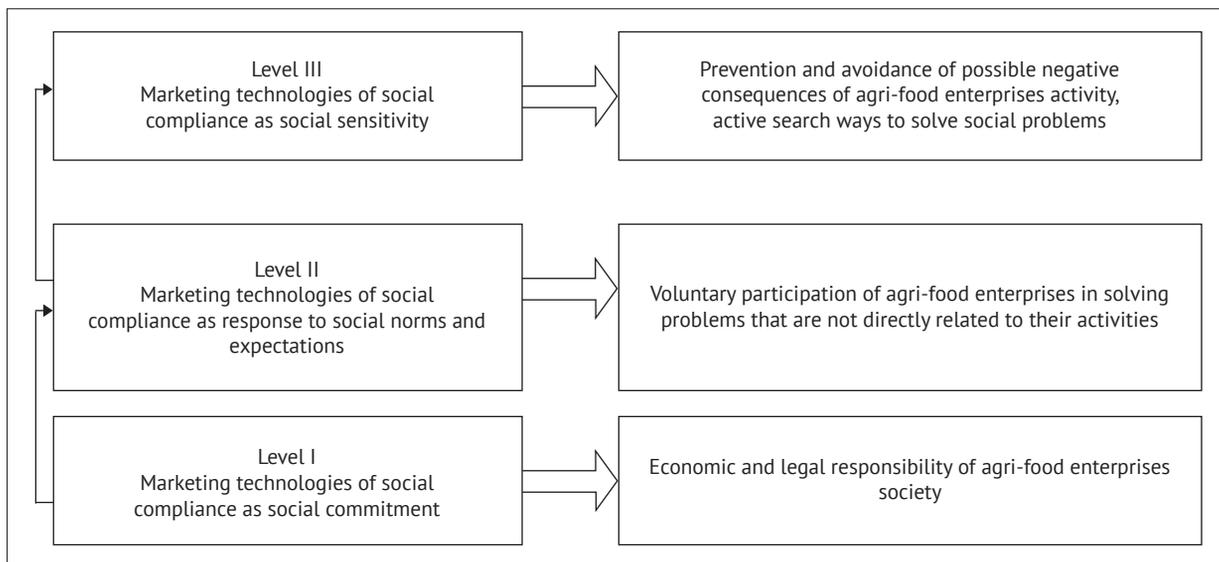


Figure 1. Three-level vector of realization of marketing programs of corporate social responsibility of agri-food enterprises
Source: improved by the authors according to data (Lungeanu & Weber, 2021; Lim et al., 2022)

Implementation of marketing programs of corporate social responsibility of agri-food enterprises is based on incentive components that take into account the basic, ethical and discretionary level of operational and production activities and ensure loyalty of major stakeholder groups (consumers, government, society, workers, etc.) to achieve quality of work and alignment of social imbalances to improve profitability in the long run, creating a trusting relationship between business, society and the state, which are important components of social relations. Social responsibility of agri-food enterprises as a socio-economic institution and as an open system within which the process of interaction between economic entities and its stakeholders is built, reduces transaction costs, suspends conflicts of interest, and provides sustainable competitive advantages through social investment, social partnership, social reporting (Lomovsky, 2016; Creane & Manduchi, 2022).

To continue thoughts of the essential formulas in the Material and methods section, the following expressions were used as well. It is necessary to combine in an integrated indicator R, stimulants and disincentives for profitability and competitiveness of marketing activities of agri-food enterprises, which dictate the effectiveness of corporate social responsibility, considering the needs of ethnic communities in certain areas by individual criteria (formula (4)):

$$R = \begin{cases} 1/D_E, & \text{if } D_E \in (0.01; 1], \\ 100, & \text{if } D_E \in (0; 0.01]. \end{cases};$$

$$D_E = \sqrt{\sum_j^m (1 - P_j^*)^2}; P_j^* = \begin{cases} P_j/P_j^n, & \text{if } P_j \leq P_j^n, \\ P_j^n/P_j, & \text{if } P_j \geq P_j^n. \end{cases} \quad (4)$$

where D_E is the Euclidean distance of the standardized indicator of the effectiveness of corporate social responsibility of agri-food enterprises, considering the social needs of ethnic communities in a given area; P_j^* is the standardized value of the performance indicator, $P_j^* \in [0; 1]$; j is the number of the performance indicator, $j = 1, m$; m is the number of indicators of the effectiveness, considering the needs of ethnic communities in a given area; P_j is the actual value of the performance indicator; P_j^n is the planned value of the j^{th} performance indicator.

Analysis of the variable indicators of corporate social responsibility development in Ukraine.

One of the indisputable tendencies of intensification of social responsibility of Ukrainian agri-food enterprises is that for most of them the implementation of social protection marketing programs and social responsibility projects is an urgent task. However, due to the lack of funding for such programs, every tenth agri-food enterprise that is not a large-scale producer of agricultural food products imposes these responsibilities on the state, as it considers them an added burden in its operational, production and marketing activities (Grazhevskaya & Mostepaniuk, 2020).

The authors studied the enterprises of agri-food production in Ukraine from 2017 to 2021 because namely this period shows the most fully and meaningful information about different socio-economic indicators that influence the agri-food business. The material for analysis was selected due to the elevated level of economic development and the presence of a wide range of components of corporate culture and social responsibility. They are included in the map of the product range of the Steppe, Forest-Steppe, Polissia, and Western zones of Ukraine (Fig. 2).

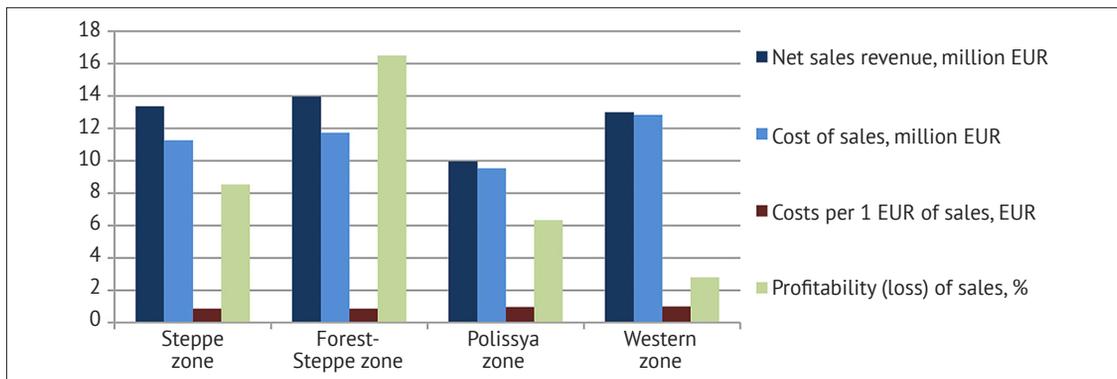


Figure 2. Economic indicators of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissya and Western zones of Ukraine for 2017-2021

Source: built by the authors according to data (Socio and economic situation..., 2021; Competitiveness rating of Ukraine..., 2021)

In 2017-2021, only 83% agri-food enterprises of Ukraine implemented the concept of marketing support of corporate social responsibility, but only half of them have tactical areas of social responsibility and twice as many of them (24%) have a budget for its implementation. It should be emphasized that stakeholders for the development of agri-food enterprises in the Steppe, Forest-Steppe, Polissya and Western zones of Ukraine, as active socially responsible entities, are becoming interested agents in the understanding of society.

Thus, if the marketing programs of stakeholders promote the corporate values of agri-food enterprises or allow sharing emotional mood with customers, they help increase consumer loyalty. Such tactics of Ukrainian agri-food producers can be characterized as effective and

efficient, especially in mass consumer markets. The social environment of enterprises (enterprise personnel, social infrastructure, components of quality of life of employees) are those material, social and spiritual conditions in which employees live and work, in which there is distribution and consumption, real connections are formed between entities, their moral and ethical values are expressed. The indirect economic effect of marketing social investment is manifested in lower production costs, increased productivity, reduced temporary disability, staffing, qualified specialists, changes in the organizational structure of production, improving social protection of workers and more. The social activity of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissya and Western zones of Ukraine is presented in Figure 3.

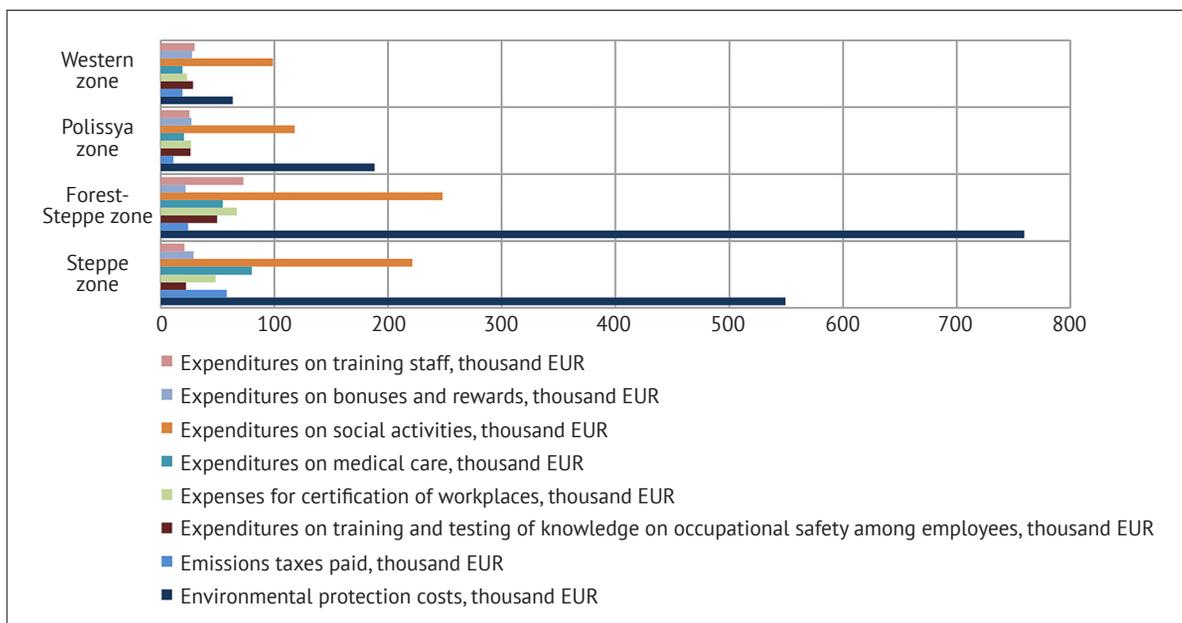


Figure 3. The amount of costs for environmental and social aspects of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissya and Western zones of Ukraine for 2017-2021, thousand EUR

Source: built by the authors according to data (Grazhevskaya & Mostepaniuk, 2020; Competitiveness rating of Ukraine..., 2021)

Strengthening the socio-economic position of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine allows achieving such tactical goals as increasing competitiveness, increasing investment attractiveness and market value overall. Theoretically, social investment should not include forced (i.e., legally regulated) costs of marketing programs that reduce their volume and, consequently, reduce corporate social responsibility. Social investments create a stable business environment, reduce operational risks, increase sales, increase productivity, expand markets, and increase financial performance and market value of enterprises overall.

The primary direction of the formation of marketing programs in the context of intensifying the marketing support of corporate social responsibility is the development of human capital, which includes improving the efficiency of human resources and the formation of intellectual potential of the enterprise. In addition, the intensification of marketing support for corporate social responsibility of Ukrainian agri-food producers in the context of increasing their competitiveness in national and global markets allows increasing the capital of intangible assets in the form of trademarks, brands, greater customer loyalty, business reputation and image among counterparties and increase investment attractiveness.

Socio-economic development of ethnic communities in the Steppe, Forest-Steppe, Polissia and Western zones of Ukraine in the context of the concept of marketing support of corporate social responsibility is carried out through the implementation of environmental, motivational levers for health protection, education, cultural values, infrastructure and other social projects, that is, by increasing the flow of social investment.

In Ukraine, the implementation of social investments is carried out in the form of financing social marketing programs, providing machinery and equipment for socially significant work by staff of enterprises with the involvement of volunteers (Wu & Kane, 2021). In authors' opinion, it is necessary to emphasize the socio-economic part of investment, as the social measures generate added income by increasing sales

and increasing the competitiveness of agri-food enterprises. The analysis of the principles of the concept of marketing support of corporate social responsibility of agri-food enterprises allowed figuring out the factors that affect their effective functioning:

1) the introduction of business approach within the communication with stakeholders. Such a step promotes the progressive reduction of the address of the budget deficit, the shadow economy in the state, and prompt tax obligation execution that relies on the budgeting and financing of government programs in the social marketing area. In addition, this implementation ensures business transparency, verification of actual reports by unbiased audit organizations, and provides information publicity on social and finance questions.

2) the introduction of the latest marketing technologies and modernization of production facilities to provide enterprises with innovation-oriented development. Finding ways to harmonize the interests of owners in terms of price, quality, safety, and environmental friendliness is a direct catalyst for innovation, including the modernization of production facilities. Implementation of marketing programs of corporate social responsibility of agri-food enterprises is considered as an added lever to stimulate their innovative development.

Using the method of assessing the comparative importance of certain parameters of marketing support of corporate social responsibility (financial, social and labour, social, environmental and relations with stakeholders) the expert assessment of the importance of the impact of selected components in agri-food enterprises in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine according to the 100-point system is made (Tables 1-6).

Expert assessment of the relative importance of the parameters of marketing support of corporate social responsibility is determined on the basis of a matrix of relative importance of factors (coefficients of the financial component of corporate social responsibility (CSR)) on current liquidity factors (1), quick liquidity (2), absolute liquidity (3), profitability (4), return on equity (5), return on business (6), turnover of fixed assets (7), turnover of equity (8), presented in Table 1.

Table 1. Matrix of relative importance of factors of marketing support of corporate social responsibility (coefficients of financial part of CSR) in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine

Factors	Steppe zone	Forest-Steppe zone	Polissia zone	Western zone	Average value (W_{ij})
1	1.124	0.119	0.114	0.116	0.368
2	0.109	0.104	0.114	0.101	0.107
3	0.109	0.119	0.128	0.116	0.118
4	0.137	0.149	0.128	0.130	0.136
5	0.137	0.134	0.128	0.144	0.136
6	0.123	0.119	0.114	0.130	0.122
7	0.123	0.119	0.128	0.130	0.125
8	0.137	0.134	0.142	0.130	0.136

Source: calculated by the authors

The level of the financial system of marketing support of CSR of agri-food enterprises of Ukraine with the help of an integrated indicator is calculated by formula (5) (Lomovsky, 2016):

$$K_{fs} = 0.368K_1 + 0.107K_2 + 0.118K_3 + 0.136K_4 + 0.136K_5 + 0.122K_6 + 0.125K_7 + 0.136K_8, \quad (5)$$

Expert assessment of the parameters of the impact of social elements according to the factors of

influence (payment of bonuses and social benefits on social activities) (1), real estate efficiency (2), providing housing for workers (3), social staff costs (4), provision of healthcare facilities (5), providing medical care to employees (6), providing social protection for staff (7), providing socio-cultural facilities (8), providing social benefits to workers (9) to the level of corporate social responsibility of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine, is presented in Table 2.

Table 2. Matrix of relative importance of factors of marketing support of corporate social responsibility (coefficients of social part of CSR) in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine

Factors	Steppe zone	Forest-Steppe zone	Polissia zone	Western zone	Average value (W_{ij})
1	0.114	0.121	0.111	0.114	0.115
2	0.102	0.107	0.105	0.107	0.105
3	0.108	0.121	0.117	0.121	0.117
4	0.102	0.107	0.105	0.100	0.104
5	0.108	0.100	0.111	0.094	0.103
6	0.120	0.121	0.117	0.114	0.118
7	0.120	0.114	0.117	0.121	0.118
8	0.114	0.107	0.105	0.127	0.113
9	0.122	0.100	0.111	0.100	0.108

Source: calculated by the authors

The level of the social part in the marketing support of CSR of agri-food enterprises of Ukraine using an integrated indicator is calculated by formula (6) (Cezarino et al., 2022; Lomovsky, 2016):

$$K_{ss} = 0.115K_1 + 0.105K_2 + 0.117K_3 + 0.104K_4 + 0.103K_5 + 0.118K_6 + 0.118K_7 + 0.113K_8 + 0.108K_9, \quad (6)$$

Expert assessment of the importance of the impact of stakeholder relations development according to the factors of impact (economic losses (1), tax burden (2), costs of working with clients in total costs of the enterprise (3), receivables (4), providing enterprises with social infrastructure (5), financing of social infrastructure institutions (6)) at the level of corporate social responsibility of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine is presented in Table 3.

Table 3. Matrix of relative importance of factors of marketing support of corporate social responsibility (coefficient of the development of relations with stakeholders) in the range of Steppe, Forest-Steppe, Polissia and Western zone of Ukraine

Factors	Steppe zone	Forest-Steppe zone	Polissia zone	Western zone	Average value (W_{ij})
1	0.182	0.159	0.178	0.127	0.162
2	0.182	0.182	0.178	0.191	0.183
3	0.145	0.136	0.143	0.170	0.149
4	0.164	0.159	0.143	0.170	0.159
5	0.164	0.159	0.178	0.170	0.168
6	0.164	0.204	0.178	0.170	0.179

Source: calculated by the authors

The level of the development of relations with stakeholders in the marketing support of CSR of agri-food enterprises of Ukraine using an integrated indicator is calculated by formula (7) (Cezarino et al., 2022; Lungeanu & Weber, 2021; Lomovsky, 2016):

$$K_{ss} = 0.162K_1 + 0.183K_2 + 0.149K_3 + 0.159K_4 + 0.168K_5 + 0.179K_6, \quad (7)$$

Expert assessment of the importance of the impact of social and labour component according to the factors of impact (employee skills (1), staff turnover (2), loss of working time (3), turnover from hiring staff (4), turnover from dismissal of staff (5), providing workers with proper working and leisure conditions (6), the cost of professional development (7), wage arrears (8), compliance with the level of wages at the enterprise to

the average level of wages in Ukraine (9) on the level of corporate social responsibility of agri-food enterprises in

the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine is presented in Table 4.

Table 4. Matrix of relative importance of the factors of marketing support of corporate social responsibility (coefficient of social and labour part of CSR) in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine

Factors	Steppe zone	Forest-Steppe zone	Polissia zone	Western zone	Average value (W_{ij})
1	0.114	0.136	0.116	0.111	0.119
2	0.100	0.106	0.116	0.111	0.108
3	0.086	0.106	0.101	0.079	0.093
4	0.143	0.152	0.130	0.143	0.142
5	0.128	0.136	0.116	0.159	0.135
6	0.100	0.076	0.087	0.079	0.086
7	0.114	0.091	0.101	0.095	0.100
8	0.128	0.121	0.145	0.159	0.138
9	0.086	0.076	0.087	0.063	0.078

Source: calculated by the authors

The level of social and labour part in the marketing support of CSR of agri-food enterprises of Ukraine using an integrated indicator is calculated by formula (8) (Cezarino *et al.*, 2022; Lungeanu & Weber, 2021; Lomovsky, 2016):

$$K_{ss} = 0.119K_1 + 0.108K_2 + 0.093K_3 + 0.142K_4 + 0.135K_5 + 0.086K_6 + 0.100K_7 + 0.138K_8 + 0.178K_9, \quad (8)$$

Expert assessment of the importance of impact of the environmental component according to the

impact factors (payment of environmental fees (1), losses of enterprises from irrational use of nature (2), adequacy of environmental costs (3), cost-effectiveness of environmental measures (4), environmental friendliness of products (5), compliance of the volume of emissions of harmful substances to their limit norm (6) to the level of corporate social responsibility of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine is presented in Table 5.

Table 5. Matrix of relative importance of factors of marketing support of corporate social responsibility (coefficient of ecological part of CSR) in the range of Steppe, Forest-Steppe, Polissia and Western zone of Ukraine

Factors	Steppe zone	Forest-Steppe zone	Polissia zone	Western zone	Average value (W_{ij})
1	0.196	0.178	0.167	0.170	0.178
2	0.157	0.200	0.148	0.170	0.169
3	0.176	0.156	0.167	0.149	0.162
4	0.157	0.133	0.185	0.128	0.151
5	0.137	0.156	0.167	0.170	0.157
6	0.176	0.178	0.167	0.213	0.183

Source: calculated by the authors

The level of the environmental component in the marketing support of CSR of agri-food enterprises of Ukraine using an integrated indicator is calculated by formula (9) (Cezarino *et al.*, 2022; Lungeanu & Weber, 2021; Lomovsky, 2016):

$$K_{ss} = 0.178K_1 + 0.169K_2 + 0.162K_3 + 0.151K_4 + 0.157K_5 + 0.183K_6, \quad (9)$$

The indicators of the components of marketing support of corporate social responsibility of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissia

and Western zones of Ukraine for 2017-2021 are analysed (Table 6).

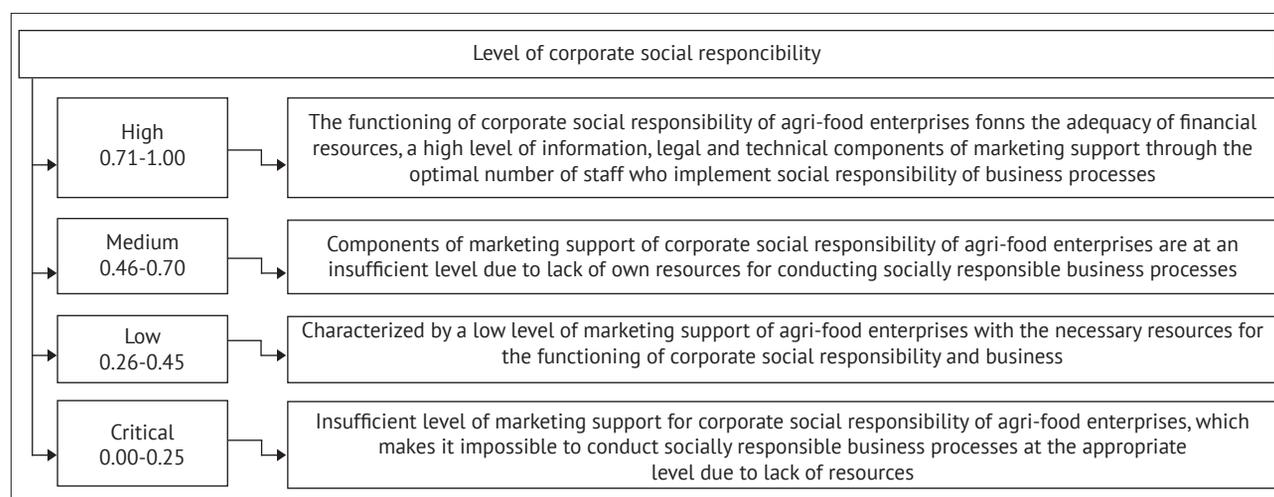
Theoretical basis and argumentation of marketing support of corporate social responsibility of Ukrainian agri-food enterprises.

The level of marketing support of corporate social responsibility of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine has heterogeneity of parameters of socially responsible business processes, which radically change the value of the integrated indicator, which has an average position of the competitive status of enterprises in the market (Fig. 4).

Table 6. The level of marketing support of corporate social responsibility of agri-food enterprises in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine on average for 2017-2021

Economic zones of Ukraine	Components of marketing support of corporate social responsibility					The level of corporate social responsibility
	Financial	Social	Development of relations with stakeholders	Social and labour	Ecological	
Steppe zone	1.486	0.726	0.195	0.302	0.643	0.675
Forest-Steppe zone	0.389	0.690	0.217	0.336	0.609	0.452
Polissia zone	1.599	0.706	0.193	0.258	0.583	0.673
Western zone	1.008	0.696	0.164	0.323	0.600	0.563

Source: calculated by the authors

**Figure 4.** Signs of the level of marketing support of corporate social responsibility of enterprises in the range of Steppe, Forest-Steppe, Polissia and Western zones of Ukraine

Source: developed by the authors

Thus, social responsibility for agri-food enterprises allows increasing the efficiency of business processes, which create the need to adapt the production cycle to environmental standards, the emergence of psychological motivating factors, increasing motivation and productivity, business, and public reputation of agri-food risks of loss of markets. The last of these advantages has a purely external pragmatic orientation for stakeholders in assessing the corporate social responsibility of agri-food enterprises, thus trying to get direct positive effects from its introduction.

Reproduction of the resource component in society, which is depleted every year and affects the environment, which is extremely vulnerable to the negative impact of human activities, requires the implementation of the concept of marketing support for corporate social responsibility (Haryanto *et al.*, 2021). This concept extends the boundaries from the economic-managerial system of relations "producer – consumer", considering such elements as intermediaries, competitors, distributors and contact audiences, to the social process influenced by the social values of its participants and society (Cook *et al.*, 2021). Combining corporate and

social intentions of agri-food enterprises with ethical characteristics of consumers affects the development of business, which is based on marketing tools with a two-vector direction, namely: first, such an association reflects the proposal to expand marketing technologies in business and to introduce in the circulation the resource elements of marketing support exclusively as a social responsibility, secondly, a radical revision of resource elements and their expansion within the framework of marketing support allows to form the latest technologies of business development with awareness of the in-depth development of corporate social responsibility (Wang, 2022; Borchers & Enke, 2022).

In this context, the implementation of the concept of marketing support of corporate social responsibility does not deny the purposeful action of agri-food enterprises – eventual commercialization and justification of profitability criteria as a social subsystem, where each element affects the economic environment and each element, in turn, affects the business (Grazhevskaya & Mostepaniuk, 2020). Thus, the long-term and profitability of agri-food enterprises in business has a social and economic connotation. At the same time, their

business task is to form such marketing behavior, under which the needs of consumers and society are met; self-employment, as an expansion of the resource elements of marketing support on the basis of corporate social responsibility, the formation of the material basis of production and its profitability (Calder, 2022; Borchers & Enke, 2022).

In addition, the marketing of corporate social responsibility creates competitive privileges to strengthen the corporate image for the benefit of consumers and creates conditions different from competitors, by creating emotional and spiritual connections with their customers (Cook *et al.*, 2021; Cezarino *et al.*, 2022).

Meanwhile, the implementation of the concept of marketing support for corporate social responsibility of agri-food enterprises determines profit as the main motive for doing business, which is acceptable if the market offers goods and services that satisfy customers in a fair way and allows them to make informed decisions regarding the purchase, as well as in the case of refusal of subjects from marketing practices that may have devastating consequences for society.

Therefore, a conceptual approach to the implementation of marketing support for corporate social responsibility, with signs of conflicting expectations of a positive social and economic effect of interested stakeholders, is aimed at sustainable development. It is the basis of corporate social responsibility of those business structures that make business decisions to those to whom these actions are directed, namely agri-food enterprises. Corporate social responsibility is the implementation of corporate governance of social obligations of interested business structures (mostly voluntary) to employees, partners, the state, civil society institutions and society itself (Wang, 2022; Alavion *et al.*, 2017).

The social component of the concept of marketing support of corporate social responsibility is a priority in harmonizing the interests of business structures and the state, and, above all, aimed at marketing activities of agri-food enterprises:

1) creating economic conditions for profitability and competitiveness of production not lower than the average level in the economy (Lungeanu & Weber, 2021);

2) ensuring comprehensive development of corporate social responsibility in the territory of ethnic communities on the basis of integration of business processes of marketing support of agri-food production and implementation of state development programs with simultaneous improvement of marketing tools of corporate capacity of enterprises (Calder, 2022);

3) introduction of modern marketing technologies and methods of forming a transparent market of competitive products and food (Hernández González, 2022);

4) formation of favourable pricing, marketing policy in order to stimulate marketing activities and corporate social responsibility in the agri-food sector of the economy (Krasnostavskaja *et al.*, 2021).

The state should define clear directions for balancing the business process of marketing support of corporate social responsibility of stakeholders for the development of agri-food enterprises, which should accumulate significant volumes of marketing innovations through marketing tools to manage corporate capacity of capital investment entities with limited involvement of external resources by stakeholders.

The concept of marketing support of corporate social responsibility of agri-food enterprises should be formed in the areas of "priority of selective amplitude of growth of economic interests" of stakeholders, to direct state influence on the level of investment in marketing activities (Pazienza *et al.*, 2022).

At the same time, stimulating the marketing activities of small and medium-sized businesses in the agri-food sector of the economy, which should be managed by stakeholders will influence GDP growth, private investment, capital accumulation in business processes of marketing socialization to make a profit and (or) achieve positive social and economic effect, through the use of the latest marketing tools in organic production.

Modelling of marketing support of corporate social responsibility of agri-food enterprises

At the same time, time constraints on increasing the relocation of marketing tools in the economic environment of agri-food enterprises based on marketing policy of economic entities will smooth the interregional asymmetry of the information field for interaction of business structures with local authorities (Borchers & Enke, 2022; Lomovsky, 2016).

Modelling could be defined as a reflexive technology aimed to be the methodological foundation of the main model in the initial stages. Using this technological approach, the vibrant economic reality of agri-food companies links with the modern analytical process (Harrison, 2021; Calder, 2022).

Among the main functions of modelling, the following should be emphasized: evaluation function (identification of the condition of the study's object functioning), diagnostic function (determination of the possible modification of its state), and search function (prediction of potential actions to develop or repair the condition of the object of study) (Yadav & Samuel, 2022).

The main factor in the formation of the theory of process modelling is the business process, which embodies a set of interdependent functional, both input and output flows, which in time are transformed by a certain synchronicity and rhythm of resources, and thus form the resulting output of products and services at the request of consumers.

Characteristic features of the business process of marketing support of corporate social responsibility of agri-food enterprises are the focus on the modern consumer and going beyond the formal organizational structures of marketing socialization of ethnic communities in each area (Miklovda *et al.*, 2012). At the same time,

based on the application of the architecture of reference models, business process modelling covers a significant set of actions aimed at differentiating the parameters of increasing current resource flows in marketing activities (Beard, 2018; Grazhevskaya & Mostepaniuk, 2020).

In the general case, the “flow” from the standpoint of mathematics, economics, logistics and computer science is defined as a set of homogeneous elements that are perceived as a whole and exist in a certain time interval. From the point of view of the current business process, the flow as a dynamic series of financial, material and information indicators reflect the transition of the enterprise from one state to another during a certain time interval. Figuring out the change in the

qualitative or quantitative structure of modelling the current business process of marketing support of corporate social responsibility of agri-food enterprises, it becomes possible to simultaneously assess the unit of time, volume and quality of product promotion and meet consumer needs (Socio and economic situation..., 2021; Beliaeva et al., 2022).

The structure of the business process of marketing support of corporate social responsibility of agri-food enterprises is considered as a multicriteria task based on the advantages of the hierarchical scenario model of the rational reference model of probabilistic time lag of profitability and competitiveness, as graphically structured by the relations “criteria parameter-alternative” (Fig. 5).

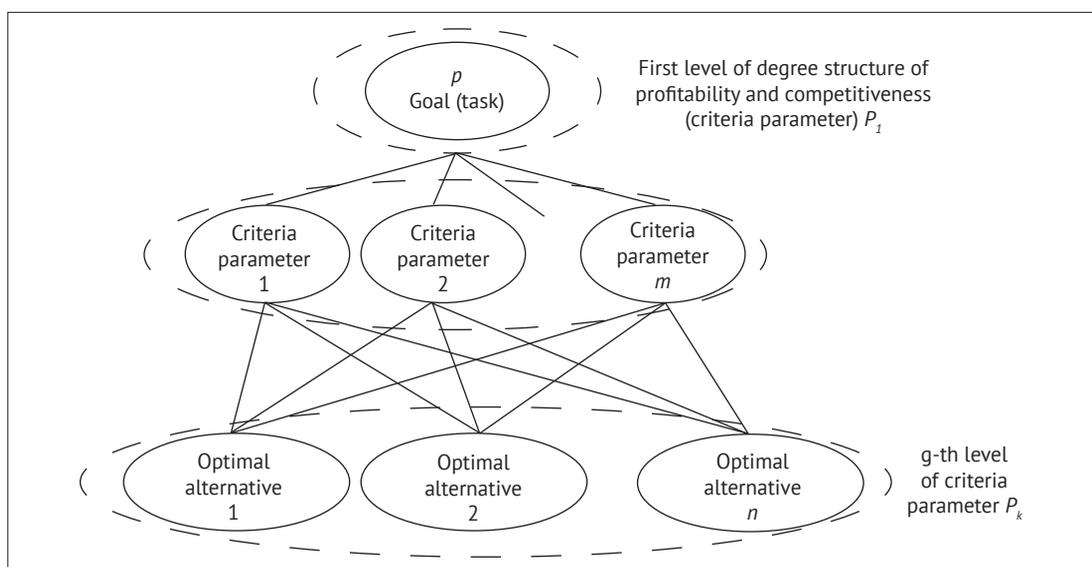


Figure 5. Structural graph-model of rational architecture of probabilistic time lag of profitability and competitiveness in the current business process of agri-food enterprises

Source: improved by the authors according to data (Kennedy & Santos, 2019; Lee & Jin, 2019; Miklovdova et al., 2012)

To achieve effective modelling of the business process of marketing support of corporate social responsibility of agri-food enterprises, one of the priority areas is to maximize the quality of sold products through optimal movement of resources with a probable time lag of profitability and competitiveness (Petr et al., 2021). This allows perfecting the multi-criteria variation of the business process by using indicative stimulators and disincentives to realize the interests of business structures based on tools of economic and mathematical modelling. In addition, there are causal links in the dysfunctions of marketing activities of agri-food enterprises to synchronize resource flows into the latest marketing technologies to obtain a positive social and economic effect.

CONCLUSIONS

Thus, the main direct effect of marketing support for corporate social responsibility is to form a positive image of agri-food enterprises, to increase their business

reputation, which can be converted into revenue growth through the relevant advertising company. At the same time, it is necessary to emphasize the types of effectiveness of corporate social responsibility in reducing individual and social risks for enterprises. That is, when implementing corporate social responsibility policy, agri-food enterprises must overcome the risks of socio-cultural organization, which weaken the implementation of the principles of the concept of marketing support of CSR and safe level of investment attractiveness of agri-food sector of economy.

During the analysis carried out within the framework of this study, it was found that between 2017 and 2021, only 83% of Ukrainian agri-food enterprises used corporate social responsibility marketing practices. Half of the organizations mentioned above have embarked on this practice, and 24% have even received the material base to implement it. A more stable position of the socio-economic state of agro-industrial enterprises in the in the Steppe, Forest-Steppe, Polissia and Western

zones of the country will allow attracting investments to the regions, form the competitiveness of the population, and increase the market value. Socio-economic development in these areas of Ukraine occurs by increasing the number of relevant social investments in various areas, including ecology, health protection, culture, and others.

The transformation of tactical business processes of agri-food entities in a competitive environment of corporate social responsibility significantly changes economic relations and requires new model designs for planning, evaluating, and forecasting the resource component of marketing activities. The model design of socially relevant business processes is a vector for levelling some uncertainty in the movement of resource

flows. Therefore, the model-forming components of marketing support of socially responsible business processes in agri-food enterprises must withstand the time lag of the trajectory of resource flow, form a balance of financial, social, environmental, and socio-labour components, as well as combine them with the development of relations between stakeholders. This will allow managing the level of corporate social responsibility in view of its purpose, modelling socially responsible business processes, forming a state of stable balance of resource flows and according to target parameters, adhering to the constant value of indicators that affect the performance of agri-food enterprises, under the best development scenario.

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Маркетингове забезпечення корпоративної соціальної відповідальності агропродовольчих підприємств

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Анотація. У статті розглянуто особливості маркетингового забезпечення корпоративної соціальної відповідальності агропродовольчих підприємств України. Метою даного дослідження є розробка наукових положень щодо реалізації концепції маркетингового забезпечення корпоративної соціальної відповідальності агропродовольчих підприємств. Сформовані положення будуть спрямовані на побудову надійних партнерських відносин зі стейкхолдерами. Формалізовано логічну архітектуру реалізації концепції маркетингового забезпечення корпоративної соціальної відповідальності агропродовольчих підприємств. Представлено напрями гармонізації інтересів бізнес-структур (стейкхолдерів) і держави в маркетинговому забезпеченні корпоративної соціальної відповідальності агропродовольчих підприємств. Структуровано граф-модель раціональної архітектури

імовірного часового лагу прибутковості та конкурентоспроможності в поточному бізнес-процесі агропродовольчих підприємств. Визначено трирівневий вектор реалізації маркетингових програм корпоративної соціальної відповідальності підприємств агропродовольчого виробництва. Проаналізовано економічні показники та обсяги витрат на екологічні та соціальні аспекти діяльності агропродовольчих підприємств у діапазоні Степової, Лісостепоної, Поліської та Західної зон України. Обґрунтовано чинники впливу на стійкий рівень маркетингового забезпечення корпоративної соціальної відповідальності, що підвищує мотивацію та продуктивність праці працівників, ділову та суспільну репутацію підприємств агропродовольчого сектору економіки та знижує ризик ринкових втрат. Доведено, що соціально-економічний розвиток етнічних громад Степової, Лісостепоної, Поліської та Західної зон України в контексті концепції маркетингового забезпечення корпоративної соціальної відповідальності здійснюється через реалізацію екологічних, мотиваційних важелів охорони здоров'я, освіти, культурних цінностей, інфраструктурних та інших соціальних проєктів, тобто шляхом збільшення потоку соціальних інвестицій

Ключові слова: екологічні та соціальні аспекти, ділова репутація, ресурсна складова, трудовий потенціал, соціальні витрати, бізнес-процеси
