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Assortment policy in the commodity science of food products in Ukraine and its impact on the economy of retail enterprises

Abstract. The assortment policy of food products represents a key factor determining the efficiency of retail enterprises and the competitiveness of the retail market. It influences the formation of retail turnover, distribution costs and the profitability of operating activities, while also reflecting

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consumer behaviour and priority preferences. This study aimed to formalise cause-and-effect relationships between the structural assortment characteristics and the economic indicators of the trade enterprises and identify the differentiated effect of assortment factors depending on the retail format. The research used methods of bibliographic analysis, grouping, time series analysis, economic and mathematical modelling (cascade model of influence of the assortment structure on retail turnover, distribution costs and operational profitability) and logical generalisation. It was found that the breadth, depth and concentration of the assortment have a significant influence on the economic indicators of the trade enterprise. For the specialised stores, the main focus should be concentrated on the management of retail turnover and the concentration of sales, and for non-specialised ones, the focus is on the distribution costs and optimisation of assortment structure. The application of the cascade model makes it possible to quantify the contribution of each product category and aggregated indicators of assortment policy to financial performance. Macroeconomic environment, primarily the income of the households and food security, forms the context of the assortment policy implementation and affects its efficiency in general. The practical significance of the study involves recommendations for trade enterprises concerning the optimisation of the assortment of products, increasing profitability and competitiveness. The results may be useful for businesses, the public authorities and scientists in the development of a strategy for trade development and improvement of assortment policy management

Keywords: product assortment structure; food retail; economic efficiency; financial performance; selling expenses; operating profitability

INTRODUCTION

Assortment policy is a crucial aspect of modern retail trade management, since it not only affects the assortment of goods on offer to the consumer, but also influences their purchase decisions, the level of demand satisfaction and the performance of retail companies. Thus, according to the research by J. Heger & R. Klein (2024), assortment management, optimisation of the product range, and its adaptation to consumer behaviour ensure an increase in sales and efficiency of retail networks, especially in the food segment, where a high variability of the assortment is closely related to consumer preferences and the multiplicity of purchase situations. S. Masaglia *et al.* (2023) pointed out that the formation of the assortment and the planning of the shelf assortment are among the factors determining the competitiveness of retail companies in the physical store and e-commerce channels. This concerns both the breadth and depth of the product assortment and the communication of these assortments to the consumer, which forms consumer expectations and stimulates purchases. At the same time, as noted by D. Aparicio *et al.* (2023), the competitive environment and market conditions prompt retail companies to make adaptive assortment decisions. In

mature markets, the availability of an optimal set of product categories and Stock Keeping Units (SKUs) can influence an enterprise's ability to attract and retain customers, particularly in the context of the transition to multichannel retailing. In addition, assortment optimisation in conjunction with pricing policy and inventory management has a significant impact on the financial and economic performance of retail companies, such as profitability, turnover of capital and selling costs. Thus, the study by Y. Mou *et al.* (2024) found that the integration of assortment, inventory and pricing optimisation improves the overall efficiency of retail networks, especially against the backdrop of the growing importance of omnichannel strategies.

The analysis of assortment solutions under modern conditions by Y. Gu & Y. Wu (2023) also found that a structured product assortment can influence consumer behaviour and expectations, which is necessary for building long-term loyalty, especially in the food segment, where the multiplicity of assortment items is combined with high demands on product quality and properties. A. Hübner & H. Kuhn (2024) have also found that, when the assortment is limited or, on the contrary, too wide, it has an uncertain effect

on sales and consumer attitude. This suggests the need for balance between the width and depth of assortment, depending on market conditions and consumer behaviour. Therefore, assortment policy is considered a key instrument of influence on the economic efficiency of trade enterprises, as it combines commodity properties of goods, market decisions and the strategic goals of the enterprise, which predetermines the efficiency of inventory management, sales and competitiveness in the food retail market.

This study aimed to develop a cascade economic and mathematical model for formalising the cause-and-effect relationships between the characteristics of food assortment policy and the economic performance of trade enterprises (retail turnover, selling expenses and profitability). The objectives of the study were to formalise the categorical structure of the food products assortment and identify key segments for the empirical analysis, to determine the impact of different assortment policy strategies on retail turnover, selling expenses and profitability of trade enterprises and to evaluate the relationship between the width, depth and balance of the assortment and financial performance of trade enterprises.

MATERIALS AND METHODS

The following methods were used to investigate the assortment policy of food products in Ukraine and its impact on the economic performance of trade enterprises: bibliographic analysis, grouping, time series analysis, methods of absolute and relative values, economic and mathematical modelling and logical generalisation. The bibliographic method was used to systematise and analyse scientific, statistical and analytical sources, which enabled for evaluation factors that form assortment policy and its impact on the economic performance of trade enterprises. The analysis of market reports, state statistics, studies of consumer behaviour and other scientific sources has become the methodological basis for determining the main trends of development of retail enterprises in the food trade sector. Materials of the State Statistics Service of Ukraine (n.d.a; n.d.b; n.d.c) were used as a source base. Grouping was used to systematise the assortment of food products

into categories and sub-segments in accordance with the analytical classification Food – Ukraine (n.d.a; n.d.b). It includes: fruits and nuts; vegetables; meat; fish and seafood; dairy products and eggs; bread and cereal products; oils and fats; sauces and spices; semi-prepared foods; confectionery and snacks; spreads and sweeteners; baby food; and pet food. This categorical structure has provided an opportunity to organise the empirical data, ensure the comparability of indicators of different store formats and distribution channels and evaluate the impact of each product group on retail turnover, sales expenses and profitability of retail trade enterprises. The grouping procedure has allowed making a transition from conceptual generalisations to quantitative analysis of assortment policy, to identify structural changes and evaluate the efficiency of inventory management, pricing and product promotion. The methods of dynamics and structure were also used in the study. Dynamics was used to analyse the changes in sales volumes of food products by distribution channels for the period 2018-2024 and to reveal the main trends of the market. Structural analysis has allowed determining the share of each product group in the total sales, evaluating the concentration of the assortment and identifying the differences in the assortment policies of traditional trade and e-commerce.

The time series analysis was used to identify the trends in retail turnover, sales expenses and profitability of trade enterprises for the period 2018-2024. The chosen time series includes a period of a relatively stable economic situation and a period of large-scale structural transformations conditioned by the COVID-19 pandemic, digitalisation of business processes and military actions in Ukraine. Such an approach allowed taking into account the long-term tendencies of the market development as well as the influence of crisis factors on the activities of economic entities and, therefore, to increase the validity of forecasting estimates. The method enabled the observed data to be decomposed into trend, seasonal and cyclic components, which allowed for the revelation of fluctuations conditioned by the structure of the assortment, dynamics of demand and other macroeconomic factors. The application of this approach made

it possible to assess the differentiated influence of the shares of individual groups of goods as well as the breadth, depth and concentration of the assortment on the financial result, and to introduce these assessments into the cascade economic-mathematical model. In addition, time-series analysis facilitates the adaptation of forecasting models to the transformation of consumers' behaviour and market conditions, which provides a more accurate assessment of the efficiency of assortment policy and resource planning within the retail enterprises. Methods of absolute and relative values were used to assess the scale of economic activity of enterprises and compare it during different time periods. Absolute values allowed to determine the volume of retail turnover and costs of sales, and relative values were used to analyse the structure of the assortment and profitability of activity in different retail formats.

Economic and mathematical modelling involved the construction of a cascade model, which formalises the cause-and-effect relationships between the structure of the assortment,

volume of retail turnover, costs of sales and profitability of retail enterprises. The model includes three equations: formation of the volume of retail turnover of foodstuffs; formation of costs of sales; formation of profitability, which are calculated separately for specialised and non-specialised stores. The variables of the model include the sales structure of product groups; breadth, depth and concentration of assortment; the share of food expenditures in household consumption; and the average wage in the trade sector. The proposed method is directed toward the formalisation of cause-and-effect relationships of the descriptive model and harmonisation of structural characteristics of the assortment with the financial and economic activities of retail enterprises. Before formalisation of the economic and mathematical model, a generalised description of the cascade approach is presented, which reflects the logic of the sequential effect of micro-, meso- and macroeconomic factors on the resulting efficiency indicators of trade enterprises. The main variables of the model are presented in Table 1.

Table 1. Variables of the cascade economic and mathematical model of the influence of food assortment policy on the economy of retail enterprises

Symbol	Indicator	Description
Dependent variables		
T_t	Retail turnover of food products	Total sales volume of food products of a retail enterprise expressed in monetary terms in period t . Includes the constant β_0 , coefficients $\beta_1, \alpha_1, \alpha_2, \alpha_3, \alpha_4$ and the random error
S_t	Selling expenses for food products	Total costs associated with the sale of food products (logistics, storage, personnel and operational support). Includes the constant γ_0 , coefficients $\gamma_1, \gamma_2, \lambda_1, \lambda_2$ and the random error w_t
R_t^{spec}	Operating profitability of specialised stores, %	Indicator of the performance efficiency of specialised food stores. Includes $\delta_0^{spec}, \delta_1^{spec}, \delta_2^{spec}, \delta_3^{spec}, \vartheta^{spec}$ and the random error ξ_t^{spec}
$R_t^{nonspec}$	Operating profitability of non-specialised stores, %	Figure effectiveness of non-specialised retail enterprises. Includes $\delta_0^{nonspec}, \delta_1^{nonspec}, \delta_2^{nonspec}, \delta_3^{nonspec}, \vartheta^{nonspec}$ and the random error $\xi_t^{nonspec}$
Independent variables (micro level)		
$a_{i,t}$	Share of category i	Share of sales of the i -th product category in the total retail turnover of food products in period t
X_1	Assortment breadth	Number of product categories of food products
X_2	Assortment depth	Number of SKUs within product categories
X_3	Assortment concentration	Share of the top five categories in total retail turnover
Control variables (meso level)		
F_{share}	Share of household expenditure on food, %	Relative share of consumer expenditure on food products, which determines potential demand and the upper limit of retail turnover
W_{trade}	Average wage in the trade sector, UAH	Forms the cost component of the activity of retail enterprises

Source: developed by the authors

The cascade structure of the model provides for a step-by-step transformation of assortment policy characteristics into indicators of trade turnover, cost of sales and operating profitability. This approach reflects the internal logic of the functioning of the trade enterprise as an integrated economic system. The method of logical generalisation was used for systematisation of modelling and data analysis results, which made it possible to formulate well-substantiated conclusions concerning the influence of assortment policy on the economic activities of trade enterprises and develop recommendations for practical activities.

RESULTS AND DISCUSSION

In modern scientific literature, the commodity science of food products is considered not only as a system of knowledge of physico-chemical and consumer properties of goods but also as a methodological and managing system interacting with decision making in the field of assortment policy, inventory management and market behaviour. This approach indicates that product quality and property assessment serve as the basis for commercial and strategic decisions in trade enterprises, which ultimately increase their competitiveness and economic efficiency. This perspective is supported by a number of recent studies that emphasise the integration of product knowledge and managerial approaches in retail trade, particularly in the context of optimising product assortments and adapting to consumer behaviour in a multichannel environment. A. Vasilyev *et al.* (2025) point out that assortment selection methods, which are based on the analysis of demand and consumer behavioural patterns, are gaining more and more practical and theoretical substantiation in the scientific and methodological literature on the management of retail networks. Also, it should be added that commodity science is of great importance in the formation of assortment policy and strategic inventory management and product quality decisions in the post-war period of development of Ukrainian trade, since it provides scientifically substantiated criteria for these decisions and strengthens the competitive positions of trade enterprises (Ilchuk *et al.*, 2025a). Commodity science affects

the efficiency and adaptability of the management of a trade enterprise through the following main functions:

- 1) analytical function – regular analysis of the consumer properties of goods and quality and safety assessment, which allows the formation of well-grounded criteria for the selection of goods for inclusion in the assortment portfolio;
- 2) assortment planning function – provision of a scientific basis for forming the product assortment, including the assessment of the optimal breadth and depth of the assortment in order to ensure that products correspond to consumer expectations and market demand;
- 3) forecasting function – use of data on trends in consumer behaviour and market changes to predict demand, the product life cycle and the adjustment of assortment decisions;
- 4) information and communication function – ensuring the management of the enterprise with relevant information about the properties of goods, new quality tendencies and legislative requirements, which enables making timely and qualitatively justified product policy decisions.

These functions ensure the effective synthesis of commodity science knowledge and management practice, which is necessary for trade enterprises with a large assortment of portfolios of foodstuffs in a dynamically changing market environment. In this sense, assortment policy is considered the key management mechanism, which translates commodity science knowledge into competitive advantages and economic performance of the enterprise. As R. Sethuraman *et al.* (2022) summarise, an assortment is a collection of items being offered to customers to choose from, while assortment policy is a set of management decisions directed towards the optimal forming, maintaining and adapting the assortment of goods in accordance with the structure of demand, consumer behaviour and long-term strategic goals. According to the studies of S. Fedoseeva & R. Herrmann (2023), the widening of the assortment depth and breadth leads to: an increase in consumer satisfaction with the assortment choice; the growth of frequency of purchases and sales volumes; the change in pricing policy and the margins of product categories. This dependence

is especially strong for food products, for which the assortment quality balance determines not only sales volumes but also the image of the trade mark and the consumer loyalty in the long term. As noted by O. El Housni *et al.* (2025), the methods of assortment modelling, which consider the consumers' behavioural reactions and inter-category relations, are acquiring the status of an important analytical instrument for making the best management decisions in this sphere. The research of S. Fedoseeva & R. Herrmann (2023) also shows that the assortment policy efficiency has a strong impact on the main performance indicators of trading enterprises: sales volumes and market share (well-designed assortment allows for better satisfying the demand); financial results (product margins, stock turnover); the risk of losses from products remaining unsold or little demanded. For instance, the research in the sphere of electronic commerce of foodstuffs testifies that the growth of the assortment depth has a positive effect on the possibility of keeping the prices high and preserving the market positions more steadily.

Besides, the assortment modelling approaches suggested by N. Tiahunova (2025) consider the complex aspects of consumer behaviour, such as the propensity of the consumer to buy items of different categories within the same shopping trip, which directly influences the expected profit from each product category. All this proves that commodity science, assortment policy and economic activity of trading

enterprises represent a single system, in which each of the components influences the ability of the enterprise to adapt to the market changes and to satisfy the consumer demand. To form and analyse an assortment of food products, a well-structured system of commodity categories is necessary, ensuring the comparability of statistical data, the possibility of structural changes, and the evaluation of assortment policy efficiency of a trade enterprise. However, for the practical implementation of assortment policy, in addition to a theoretical understanding of the commodity science role, it is also necessary to have a well-structured system of assortment classification, ensuring the comparability of data and its quantitative analysis. The study presented is based on a categorical classification of food products, which simplifies the transition from theoretical generalisations to empirical analysis of the structure of the assortment. According to the analytical classification of Statista, the food product assortment is structured into main groups and subgroups, which reflect the leading consumption trends in the global food market. The main segments include: fruits and nuts (fresh, processed and frozen); vegetables (fresh, processed and frozen); meat (fresh, processed and meat substitutes); fish and seafood (fresh and processed); dairy products and eggs; bread and cereal products; oils and fats; sauces and spices; semi-prepared and ready-to-eat meals; confectionery and snacks; spreads and sweeteners; baby food; and pet food (Table 2).

Table 2. Analytical classification of the food product assortment

Segments	Sub-segments
Fruits and nuts	Fresh fruits; processed and frozen fruits and nuts
Vegetables	Fresh vegetables; processed and frozen vegetables
Meat	Fresh meat; processed meat; meat substitutes
Fish and seafood	Fresh fish; fresh seafood; processed fish and seafood
Dairy products and eggs	Milk; milk substitutes; yoghurt; cheese; eggs; other dairy products
Bread and cereal products	Bread; pasta; rice; breakfast cereals; other cereal products
Oils and fats	Butter; margarine; edible oils; other oils and fats
Sauces and spices	Tomato ketchup; other sauces; spices; culinary herbs
Semi-prepared foods	Soups; ready-to-eat meals
Confectionery and snacks	Confectionery; snacks
Spreads and sweeteners	Spreads; sweeteners
Baby food	Food intended exclusively for infants and young children
Pet food	Food intended exclusively for domestic animals

Source: developed by the authors based on Food – Ukraine (n.d.a; n.d.b)

As can be seen, the presented structure includes not only the traditional food groups but also the modern trends of the food market development, such as the growth of products with added value, semiprepared products, functional products, and alternative products (meat substitutes, plant-based drinks). For trade enterprises, this classification is the basis for the strategic management of the assortment matrix, allowing a differentiated approach to inventory management, pricing, and promotion within each product category. In food commodity science, the categorical structure of the assortment has a system-forming role, uniting consumer properties of goods, technologies of their storage and distribution, and economic efficiency of trade enterprises. Simultaneously, at the level of product categories, assortment policy is developed, which forms the breadth, depth and balance of the assortment depending on the retail format, sales channel (offline or online) and consumer behaviour. Thus, the use of a unified categorical classification of food products provides a methodological basis for further analysis of assortment dynamics, evaluation of its efficiency and the study of the relationship between assortment policy and financial performance of retail enterprises both in the offline and online trade. The proposed categorical structure of the assortment provides an analytical framework for studying the dynamics and structural shifts in the market of retail and e-commerce trade in food products. Analysing sales indicators across individual product categories allows differences in assortment policy formation to be identified according to the sales channel and its economic consequences to be assessed. Evaluation of the food products assortment is most effective when carried out by main product categories, as it allows for determining the structural shifts, dynamics of demand and the peculiarities of

assortment policy formation depending on the distribution channel. According to the data of retail and online food trade in Ukraine for 2018-2024, there are significant differences both in the volume of sales and in the structure of the assortment (Food – Ukraine, n.d.a; n.d.b).

At the same time, a study of the wholesale trade in food products by M.M. Ilchuk et al. (2025b) showed that the characteristics of the assortment structure and the concentration of sales in key categories remain of a strategic nature for the wholesale trade channel as well, providing stability of turnover and optimising supply chains. This approach makes it possible to consider assortment policy as a systemic mechanism that adapts to the specifics of the sales channel and consumer demand, integrating commodity properties of goods with economic interests of retail enterprises. In the traditional retail segment, the total volume of food sales increased from USD 43.32 billion in 2018 to USD 59.24 billion in 2024, which demonstrates a moderate but steady positive trend, though a decrease is observed in 2022. The basis of the assortment structure is still the food products of daily demand, namely meat, dairy products and eggs, vegetables, bread and cereal products. Thus, in 2024, the turnover of the meat market was USD 14.34 billion, dairy and egg products were USD 9.21 billion, and vegetables were USD 7.62 billion, confirming the dominance of traditional food groups in the consumer basket. In the structure of retail trade, there is an increasing role of products with higher added value, such as confectionery and snacks, semi-prepared foods, sauces and spices. Thus, the turnover of semi-prepared foods in 2018 was USD 2.13 billion, and in 2024 it was USD 3.09 billion, reflecting a shift in consumer preferences towards convenience and time savings (Table 3).

Table 3. Dynamics and structure of the food assortment in retail trade

Indicator	Year							Absolute change 2018-2024, billion USD	Relative change 2018-2024, %
	2018	2019	2020	2021	2022	2023	2024		
Sauces and spices: billion USD	1.12	1.32	1.41	1.50	1.25	1.41	1.55	0.43	38.39
share, %	2.58	2.59	2.58	2.56	2.69	2.64	2.61		

Table 3, Continued

Indicator	Year							Absolute change 2018-2024, billion USD	Relative change 2018/2024, %
	2018	2019	2020	2021	2022	2023	2024		
Fruits and nuts: billion USD share, %	4.32 9.97	5.08 9.96	5.44 9.95	5.80 9.9	4.46 9.6	5.53 10.36	6.10 10.29	1.78	41.2
Confectionery and snacks: billion USD share, %	2.94 6.79	3.47 6.8	3.91 7.16	4.31 7.35	3.63 7.81	4.13 7.74	4.51 7.62	1.57	53.06
Pet food: billion USD share, %	0.22 0.51	0.32 0.63	0.43 0.79	0.55 0.94	0.47 1.01	0.51 0.96	0.54 0.91	0.32	145.45
Fish and seafood: billion USD share, %	2.34 5.40	2.81 5.51	2.84 5.20	3.11 5.31	3.05 6.56	3.35 6.28	3.61 6.09	1.27	54.7
Bread and cereal products: billion USD share, %	5.59 12.9	6.55 12.84	6.99 12.79	7.42 12.66	4.63 9.97	5.21 9.77	5.80 9.79	0.21	3.76
Vegetables: billion USD share, %	5.24 12.09	6.16 12.08	6.59 12.06	7.03 11.99	6.08 13.09	6.98 13.08	7.62 12.87	2.38	45.8
Oils and fats: billion USD share, %	1.15 2.65	1.44 2.82	1.54 2.82	1.74 2.97	1.40 3.01	1.66 3.11	1.81 3.06	0.66	57.39
Dairy products and eggs: billion USD share, %	6.98 16.11	8.17 16.02	8.72 15.95	9.26 15.81	7.16 15.41	8.23 15.42	9.21 15.55	2.23	31.8
Baby food: billion USD share, %	0.34 0.79	0.36 0.71	0.39 0.71	0.44 0.75	0.33 0.71	0.34 0.64	0.36 0.61	0.02	5.88
Spreads and sweeteners: billion USD share, %	0.65 1.50	0.75 1.47	0.79 1.45	0.83 1.42	0.57 1.23	0.64 1.20	0.70 1.18	0.05	7.69
Meat: billion USD share, %	10.30 23.78	12.08 23.69	12.90 23.60	13.72 23.42	10.89 23.45	12.59 23.58	14.34 24.20	4.04	39.23
Semi-prepared foods: billion USD share, %	2.13 4.92	2.51 4.92	2.69 4.92	2.88 4.91	2.53 5.45	2.79 5.22	3.09 5.21	0.96	45.07
Total: billion USD share, %	43.32 100.00	51.02 100.00	54.64 100.00	58.59 100.00	46.45 100.00	53.37 100.00	59.24 100.00	15.92	36.74

Source: developed by the authors based on Food – Ukraine (n.d.a; n.d.b)

In comparison with the traditional retail trade, the online food trade demonstrates higher growth rates of turnover and a different structure of the

assortment. The total volume of online food trade from 2018 to 2024 increased from USD 266.54 million to USD 703.55 million, except in 2022, when

there was a sharp decline in turnover. The online assortment is represented mainly by commodity

groups that have a large turnover, a typical consumer and convenient logistics (Table 4).

Table 4. Dynamics and structure of the food assortment in e-commerce

Indicator	Year							Absolute change 2018-2024, billion USD	Relative change 2018-2024, %
	2018	2019	2020	2021	2022	2023	2024		
Sauces and spices: billion USD share, %	5.78 2.17	7.07 2.07	9.19 1.77	12.65 1.68	3.96 3.01	7.38 2.14	13.78 1.96	8.00	138.41
Fruits and nuts: billion USD share, %	20.90 7.84	26.88 7.87	40.46 7.79	57.99 7.69	11.87 9.01	28.17 8.15	56.00 7.96	35.10	167.94
Confectionery and snacks: billion USD share, %	39.62 14.87	52.83 15.46	89.06 17.14	134.70 17.87	19.96 15.14	59.31 17.17	124.40 17.68	84.78	213.97
Pet food: billion USD share, %	44.49 16.69	52.80 15.45	66.30 12.76	87.35 11.59	8.58 6.51	31.93 9.24	67.35 9.57	22.86	51.38
Fish and seafood: billion USD share, %	11.51 4.32	14.74 4.31	22.09 4.25	31.67 4.2	6.65 5.05	15.58 4.51	30.91 4.39	19.40	168.55
Bread and cereal products: billion USD share, %	22.09 8.29	29.36 8.59	54.95 10.57	88.74 11.77	12.86 9.76	38.44 11.12	80.56 11.45	58.47	264.75
Vegetables: billion USD share, %	24.86 9.33	32.13 9.4	48.67 9.37	70.05 9.29	13.93 10.57	33.79 9.78	67.72 9.63	42.86	172.45
Oils and fats: billion USD share, %	7.57 2.84	9.13 2.67	12.27 2.36	16.43 2.18	5.20 3.95	9.23 2.67	16.21 2.30	8.64	114.14
Dairy products and eggs: billion USD share, %	24.31 9.12	32.13 9.40	47.99 9.24	68.81 9.13	12.01 9.11	32.24 9.33	67.02 9.53	42.71	175.68
Baby food: billion USD share, %	4.45 1.67	4.59 1.34	4.89 0.94	5.12 0.68	4.11 3.12	4.45 1.29	4.99 0.71	0.54	12.13
Spreads and sweeteners: billion USD share, %	10.32 3.87	11.87 3.47	14.45 2.78	18.23 2.42	8.07 6.12	11.66 3.37	17.88 2.54	7.56	73.26
Meat: billion USD share, %	41.84 15.70	56.52 16.54	89.87 17.30	133.30 17.69	20.02 15.19	60.21 17.43	129.00 18.34	87.16	208.34

Table 4, Continued

Indicator	Year							Absolute change 2018-2024, billion USD	Relative change 2018-2024, %
	2018	2019	2020	2021	2022	2023	2024		
Semi-prepared foods: billion USD	8.80	11.70	19.37	28.85	4.57	13.14	27.73	18.93	215.11
share, %	3.30	3.42	3.73	3.83	3.47	3.80	3.94		
Total: billion USD	266.54	341.75	519.56	753.89	131.79	345.53	703.55	437.01	163.95
share, %	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: developed by the authors based on Food – Ukraine (n.d.a; n.d.b)

In 2024, the largest turnover was recorded for meat products (USD 129.0 million), confectionery and snacks (USD 124.4 million), bread and cereal products (USD 80.56 million), vegetables (USD 67.72 million) and dairy products and eggs (USD 67.02 million). It is interesting to note that e-commerce is characterised by a fairly high share of pet food in 2024 (USD 67.35 million), which indicates the formation of a specialised niche assortment in this sales channel. The comparative analysis shows that in e-commerce, the assortment policy is less focused on the width of the product range and more on the depth and concentration of the assortment in commodity groups with high and stable demand. This is evidence that in the online segment, assortment management is based not only on the commodity properties of goods but also on logistics, standardisation, and consumer behaviour. Thus, the results indicate a differentiation of assortment policy depending on the retail format. The provision of a complete assortment of basic food products is a priority for the traditional trade, while in e-commerce, the leading assortment strategy is to focus on commodity groups with high turnover, stable and predictable demand and high sales potential. This indicates an increasing role of assortment management as an instrument to improve the economic efficiency of trade enterprises. The results of the dynamic and structural analysis make it possible to move from the description of the sales volumes to the evaluation of the economic efficiency of the assortment policy. This transition is of fundamental importance since the real economic effect of managerial decisions in the assortment strategy manifests itself in the financial and economic indicators.

The effectiveness of the assortment policy of trade enterprises of the food market should be evaluated not only based on the absolute sales volumes but also on the structural assortment characteristics, such as the level of sales concentration in individual commodity groups, the stability and predictability of demand and turnover potential. This approach allows moving from the purely quantitative analysis of the assortment to the evaluation of its economic efficiency. According to the data for 2018-2024, in both traditional retail and e-commerce of food products, a high concentration of sales is observed in a narrow range of commodity groups. In retail trade, the commodity groups such as meat, dairy products and eggs, vegetables, bread and cereal products accounted for more than half of the total sales of food products in 2024. This commodity structure is characterised by a focus on commodity groups of the mass demand, which ensures the commodity turnover, but, at the same time, limits the possibilities for expanding the margins. In e-commerce, the concentration of commodity groups of the effective assortment is higher. The largest volumes of sales are observed in the commodity groups such as meat, confectionery and snacks, pet food, bread and cereal products, dairy products and eggs. The high share of these commodity groups in the total online sales shows that the commodity policy of the enterprise is focused on products with stable demand, relatively low risk of write-offs, and the ability to scale through digital channels. From the point of view of commodity science, the efficiency of the assortment is also determined by the balance between fast-moving commodity groups and commodity

groups with a higher risk of losses. In retail trade, a significant share of fresh products (meat, vegetables, dairy products) increases the requirements for inventory management, quality control, and logistics. In e-commerce, the relatively higher share of products with a longer shelf life (confectionery, snacks, pet food, oils and fats) reduces operational losses and increases commodity turnover.

An important criterion for an effective commodity policy of a retail enterprise is the ability to adjust the commodity structure of the assortment to external shocks. The decrease in sales in 2022, observed both in retail trade and in e-commerce, was accompanied by an increase in demand for commodity groups of the main assortment, which indicates their “core” for the assortment. At the same time, in 2023-2024, the restoration of sales volumes occurred more dynamically in commodity segments with a more flexible assortment that more quickly responded to changes in consumer demand, primarily in the online channel. Hence, the findings of the analysis confirm that the efficiency of assortment policy depends not so much on the width of the assortment, but on its structural optimisation, concentration of the main commodity groups, and ability to adapt commodity properties to the economic interests of a trade enterprise, which contributes to the growth of turnover, reduction of losses, and improvement of the financial stability of the multichannel trade enterprise. The commodity structure of the assortment influences the financial results of activities of trade enterprises, the level of revenue, the speed of turnover of capital and the size of operating costs. In the food market, the above-mentioned influence is particularly topical, which is caused by a large share of fast-moving goods, a significant share of fresh products, and relatively low possibilities for long-term storage. In such circumstances, assortment policy is a principal means of adapting the commodity properties of goods to the economic interests of the trade enterprise. When evaluating the economic efficiency of assortment policy, it is advisable to use a system of indicators of sales volumes, efficiency of commodity circulation and financial results of activities. The dynamics of these indicators make it possible to trace

the process of transformation of changes in the structure of the assortment into the financial results of the activities of trade enterprises. It should be emphasised that the total sales volume of food products presented in Tables 1 and 2, in economic terms, is comparable to the retail turnover of food products as indicated by the official statistics of the State Statistics Service of Ukraine. However, in the framework of this research, these indicators are used for different analytical purposes: the Statista data for the structural and assortment analysis by commodity groups, and the official data of the State Statistics Service for the estimation of financial and economic results of activities of trade enterprises.

The volume of retail turnover of food products is a basic indicator that characterises the economic effect of assortment policy. Changes in the structure of the assortment, in particular an increase in the share of fast-moving goods, for which there is a stable demand, lead to an increase in the volume of sales even under the influence of external shocks. Meanwhile, the high concentration of sales in a relatively narrow range of commodity groups guarantees a relatively stable sales turnover, but can also limit the growth potential of profitability. A high share of food products in total turnover is typical for the food retail market, which indicates the structural dependence of the financial results of enterprises on the effective formation of the commodity assortment in this group. In this context, the assortment policy acts as an instrument not only for the implementation of consumer demand, but also as a factor in the formation of the revenue base of trade enterprises. The data in Table 5 show the high variability of retail sales turnover dynamics in the period 2018-2024 under the influence of macroeconomic, institutional and crisis factors. In 2020, there was a decrease in total retail turnover against the background of the restrictive measures caused by the pandemic, but in 2021, there was a sharp increase in sales volumes. The reason for the decline in 2022 is the influence of military risks and supply chain ruptures, while in 2023-2024, a steady growth trend is noted due to the adaptation of trade enterprises to the new realities.

Table 5. Dynamics of the main indicators of retail turnover for enterprises

Indicator	Year						
	2018	2019	2020	2021	2022	2023	2024
Total retail turnover, million UAH	930.63	1,094.05	868.28	1,443.83	1,396.27	1,855.38	2,171.98
Turnover of food products, million UAH, including:	317.29	367.78	417.28	480.65	423.94	562.60	n/a
in specialised stores	8.04	9.30	11.59	12.46	10.51	17.11	n/a
in non-specialised stores	309.25	358.48	405.69	468.19	413.44	545.49	n/a
Share of food products in total turnover, %	34.09	33.62	48.06	33.29	30.36	30.32	–

Note: the total volume of retail turnover of food products is defined as the sum of turnover from food, beverages, and tobacco products in specialised stores and non-specialised stores with a predominance of food assortments

Source: the authors' calculations based on the State Statistics Service of Ukraine (n.d.c)

The dynamics of food sales generally repeat the dynamics of total retail turnover, but have relatively higher stability. This fact confirms the countercyclical nature of demand for food products and their leading role in the consumer basket. In 2023, the volume of food sales reached its highest value for the entire period under review, which indicates an increase in the role of the food group in the formation of the revenue base of trade enterprises. According to the structural analysis, the share of non-specialised stores with a prevailing share of food products in food turnover is more than 95%. This indicates a change in retail channels towards the universalisation of the store formats and concentration of the commodity supply in large retail chains. Simultaneously, relatively low and increasing sales dynamics in specialised stores may suggest the formation of niche markets for the products with a differentiated assortment and a higher level of service. The share of food products in the total retail turnover demonstrates a downward trend: it decreased from more than 34% in 2018-2019 to about 30% in

2022-2023. This tendency suggests an increasing role of non-food products; however, it does not reduce the food segment's role as a tool for providing stable cash flows in periods of economic instability. The increase in sales dynamics and the structural shifts in assortment necessitate the analysis of inventory as a component of operational efficiency in retail trade. Due to the dominant share of food products in the turnover structure, the efficiency of inventory management in this segment defines the balance between supply continuity, financial stability and the ability of trade enterprises to adapt to external shocks. According to Table 6, the dynamics of food products inventory in the Ukrainian retail trade during 2019-2023 were uneven, reflecting the reaction of trade enterprises to the changes in consumer demand, logistical risks and inflationary expectations. At the same time, the ratio of inventories to sales, represented by the inventory-to-turnover coefficient, shows relative stability, which is a sign that trade enterprises seek to maintain a certain level of inventory per sales unit.

Table 6. Indicators of inventory management efficiency for food products in trade enterprises

Indicator	Year				
	2019	2020	2021	2022	2023
Food product inventories, million UAH	25,736.50	27,970.80	33,804.40	25,799.90	35,123.20
Turnover of food products, million UAH	367.78	417.28	480.65	423.94	562.60
Inventory-to-turnover coefficient, units	70.00	67.00	70.30	60.90	62.40

Note: the inventory-to-turnover coefficient is a dimensionless indicator representing the ratio of inventory volume to retail turnover, reflecting the amount of stock per unit of sales; classical inventory turnover metrics are not applied in this study due to the aggregated nature of official statistics from the State Statistics Service of Ukraine, which prevents a correct comparison of annual turnover with national inventory volumes; the analysis covers 2019-2023 because official data on food product inventories in Ukrainian retail trade have only been published since 2019; data for 2018 are unavailable, and statistics for 2024 were not accessible at the time of the study, making it impossible to include these years in the analysis

Source: the authors' calculations based on the State Statistics Service of Ukraine (n.d.c)

The decrease in the inventory-to-turnover coefficient in 2022-2023 compared to the pre-crisis period can be regarded as an adaptation of inventory management models to the conditions of increased uncertainty, including through assortment optimisation and inventory redundancy reduction. Thus, the analysis of inventory supplements the assessment of assortment policy performance, allowing not only for the evaluation of sales dynamics but also for the assessment of resource efficiency in the formation and maintenance of the product range. Within the framework of the proposed model, the inventory turnover coefficient is an indicator of the operational efficiency of assortment policy. The relatively stable dynamics of this indicator in 2019-2023, against the background of fluctuating turnover, suggest a flexible assortment policy, as well as a conscious effort by trading enterprises to reduce the risk of overstocking without narrowing the core assortment. The

pre-tax financial result and the operating profitability of trading enterprises are a generalised indicator of the economic impact of assortment policy on the activities of trading enterprises. A rationally formed assortment contributes to increasing profitability due to the concentration of the trading enterprise on commodity groups with stable demand, optimal proportions of basic and high-margin goods, and a decrease in losses from overstocking. As can be seen from Table 7, the pre-tax financial result of trading enterprises in the food segment has undergone significant fluctuations during 2018-2024, which is caused by the influence of external factors, logistic risks, and changes in demand. The growth in profit in 2021 and 2024 against the background of the growth in the turnover of food products and the optimisation of the assortment structure indicates the economic feasibility of concentrating on commodity items with high turnovers and predictable demand.

Table 7. Financial performance of trading enterprises in the food segment

Indicator	Year						
	2018	2019	2020	2021	2022	2023	2024
Pre-tax financial result, million UAH, including:	3,870.44	8,589.06	1,942.20	12,384.26	-6,303.08	882.54	9,302.80
in specialised stores	143.81	99.01	428.37	958.45	511.17	704.67	774.88
in non-specialised stores	3,726.63	8,490.05	1,513.83	11,425.81	-6,814.25	177.87	8,527.92
Operating profitability, %, by							
specialised stores	9.54	5.04	17.09	26.69	14.85	17.02	12.51
non-specialised stores	9.86	16.22	14.73	17.44	8.13	6.45	10.79
Selling expenses, million UAH, including:	50,850.53	73,092.96	95,634.01	92,411.88	82,168.58	125,593.97	147,469.77
in specialised stores	1,811.86	420.24	415.42	1,042.47	1,026.76	635.65	1,330.37
in non-specialised stores	49,038.67	72,672.72	95,218.59	91,369.41	81,141.82	124,958.33	146,139.40

Note: selling expenses are aggregated from data on large, medium, and small retail enterprises according to store type; a general indicator of operating profitability was not calculated due to differences in enterprise scale and cost structure

Source: compiled by the authors based on the State Statistics Service of Ukraine (n.d.a; n.d.b)

Operating profitability in specialised stores has higher values than in non-specialised stores, which can be explained by the smaller volumes of operations and the possibility of more accurate assortment orientation toward a particular consumer. Non-specialised stores, whose share in the turnover is the largest, demonstrate a relatively stable but lower level of profitability, which

is due to high costs of sales and the complexity of logistics of a wide assortment. Costs of sales show the influence of scale and concentration of sales. In non-specialised stores, they are several times higher than in specialised stores; however, when calculated per unit of turnover, they demonstrate the efficient use of resources within trade networks. The reduction of costs of sales during

some periods indicates the optimisation of inventory management and logistics processes, which makes it possible to maintain financial stability in a crisis. At the same time, an expansion of the assortment alone cannot become a factor in increasing profitability. An economic effect is achieved only if the assortment policy corresponds to the financial potential of the trading enterprise, logistical potential, and the characteristics of the sales channel. Thus, assortment policy is an integrating mechanism that combines commodity characteristics of the product and financial indicators of the activities of trading enterprises. To sum it up, the efficiency of assortment policy in the food market is determined by an increase in turnover, inventory turnover and improvement of financial and economic performance and profitability. These results substantiate the grounds to treat assortment management as an economic stability factor of trading and electronic trading enterprises. The research into turnover dynamics, structure of assortment, inventory and operating profitability of food trading enterprises has revealed the presence of sustained differences in the indicators depending on the trading activity format and the efficiency of

assortment management. The trends described herein confirm the multiple-factor nature of the financial performance of trading and electronic trading, which makes it impossible to adequately explain the results by a separate indicator. Therefore, it is necessary to formalise the relationships between the main parameters of assortment policy, logistical and resource and format characteristics of trading enterprises in the form of an integrated economic and mathematical model that would allow a quantitative evaluation of their total impact on the operating activities. Table 8 shows the dynamics of the main macroeconomic and socio-economic indicators that affect food security and assortment policy formation of trading enterprises in Ukraine for 2018-2024. It demonstrates the dynamics of Ukraine's position in the Global Food Security Index (GFSI) (n.d.), the average salary of the population in general and of the employees of trade, and the proportion of consumer spending on food. The table reflects the interdependence of the population's income and expenditures and the efficiency of assortment policy, and the influence of economic and external factors on the provision and diversity of the food products.

Table 8. Dynamics of food security, household income and food expenses

Indicator	Year						
	2018	2019	2020	2021	2022	2023	2024
GFSI rank	63	76	54	58	71	n/a	n/a
Average wage, UAH	7,810.88	9,205.19	10,340.35	12,993.56	13,376.21	14,308.46	17,486.60
Average wage in the trade sector, UAH	n/a	n/a	12,028.00	14,556.00	18,346.00	21,797.00	28,040.00
Share of household expenditure on food, %	49.40	48.50	49.20	47.10	–	–	–

Source: compiled by the authors based on Global Food Security Index (GFSI) (n.d.), Average monthly wages by industry (Ukraine) (n.d.), State Statistics Service of Ukraine (n.d.d.)

The analysis of the information in Table 8 demonstrates that Ukraine's position in the Global Food Security Index has changed several times from 2018 to 2022, which indicates an unstable state of food security in the context of economic and external influences. Simultaneous growth of average wages of the population and workers of trade characterises an increase in purchasing power, while a high share of household expenses on food proves the importance of food costs in the family budget. This

leads to the conclusion that the effective assortment policy of trade enterprises should be based not only on internal economic resources but also on the variability of the external environment that forms the availability and diversification of the food market. The combination of the analysis of assortment structure, sales dynamics and financial indicators of trade enterprises proved the existence of sustainable cause-and-effect relationships between assortment parameters and economic results. In order to

systematise the above-mentioned cause-and-effect relationships and formalise the logic of the influence of assortment policy on key performance indicators, the application of a descriptive model is reasonable. The proposed descriptive model employs both level and block approaches. The levels characterise the scope of assortment policy formation and implementation (macro-, meso- and microeconomic levels), while the blocks illustrate the transformation logic of the external environment into economic results of trade enterprises. The intersection of the levels and the blocks enable to determine the scope of responsibilities and the influence channels, providing the methodological framework for the further econometric

modelling (Fig. 1). The descriptive model determines the general logic and influence directions of assortment policy on the economic performance of trade enterprises; however, it does not allow evaluating the quantitative strength or direction of the above-mentioned influence. In this context, the subsequent research stage is the development of a cascading econometric model that would provide an opportunity to formalise the analysis of the identified dependencies. Based on the descriptive model and the analysis results of assortment policy indicators, the cascading econometric model of food product assortment policy influence on the economic performance of trade enterprises has been developed.

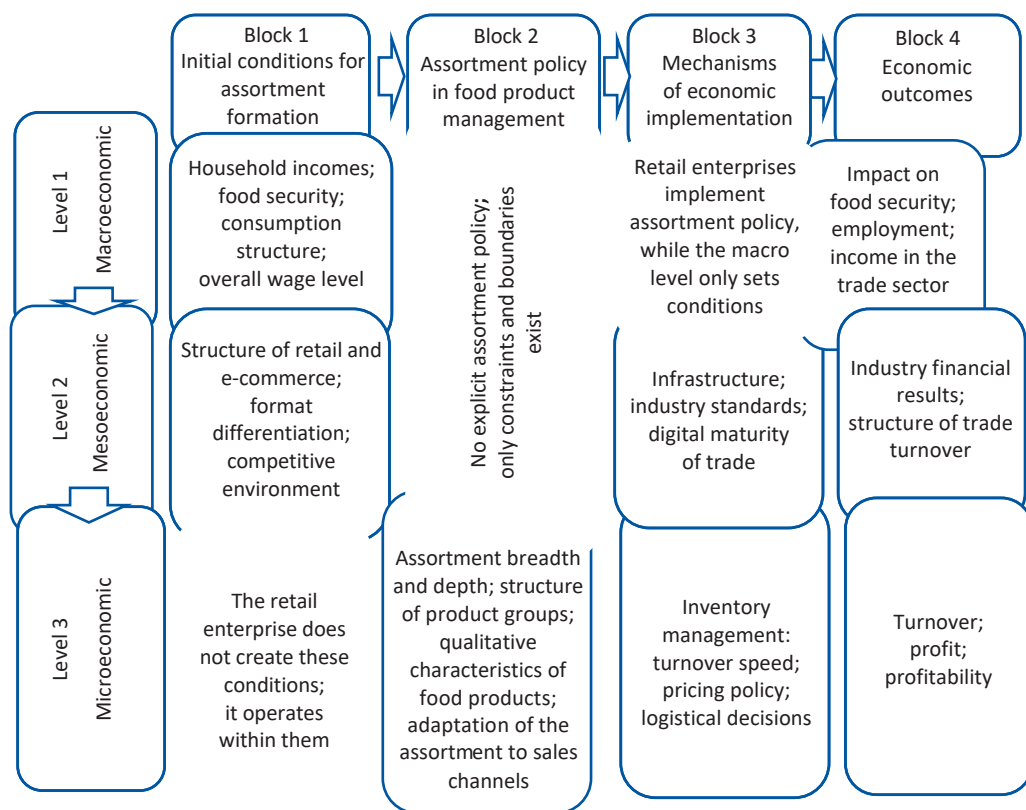


Figure 1. Descriptive model of the impact of food product assortment policy in Ukraine on the economic performance of retail enterprises

Source: developed by the authors

At Level 1, the model involves exogenous constraints and stimuli that are not directly

related to the retail business but determine the assortment formation potential. In this sense,

the Level 1 plays the role of a “link” between the macroeconomy and the business enterprise. Level 3 is the core level of the model that implements the assortment policy as an integration of product and economic decisions. The second stage of the cascade includes the model for the formation of selling costs for food products depending on the achieved turnover, assortment structure, and the cost factors of sales. Inclusion of the indicator of assortment concentration makes it possible to account for the scale effects and the complexity of logistics and operational processes, while the average wage in trade reflects the laboriousness of the sales process and is one of the main cost items in the structure of retail business costs. The second model formalises the mechanism of transforming the sales volume and assortment structure into the cost component of activities. At the third stage of the cascade, the operating profitability of retail enterprises is separately modelled for specialised and non-specialised trade formats. Profitability is viewed as the result of the interaction of the achieved turnover, selling costs, and assortment structure that enables tracing the differences in the sensitivity of economic results to assortment factors depending on the trade format. Segmentation of the models by trade formats makes it possible to ensure the greater economic meaningfulness of the results and enhance the analytical value of the study. Macroeconomic indicators (food security, incomes of the population) are not included directly in the models but are used in the interpretation of the results and explanation of the revealed trends. This approach makes it possible to preserve the analytical compactness of the econometric models without sacrificing their economic significance. The proposed cascade econometric model creates the methodological framework for a comprehensive analysis of the influence of food product assortment policy on the main economic outcomes of retail enterprises and forms the basis for a comparative evaluation of the effectiveness of assortment decisions in different trade formats.

Model 1. Turnover of food products:

$$T_t = \beta_0 + \sum_{i=1}^n \beta_i a_{i,t} + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 F_{share} + \varepsilon_{t'} \quad (1)$$

where β_0 is the model constant; β_i are coefficients reflecting the contribution of the respective product categories to the turnover of food products; $\alpha_1, \alpha_2, \alpha_3, \alpha_4$ are coefficients for aggregated indicators of assortment policy and consumer demand; ε_t is a random error capturing the influence of non-formalised factors. The condition $\sum_{i=1}^n \beta_i = 1$ is imposed to avoid perfect multicollinearity, with one category used as the base.

Model 2. Selling costs of food products (assortment implementation mechanism):

$$S_t = \gamma_0 + \gamma_1 T_t + \sum_{i=1}^n \gamma_i a_{i,t} + \lambda_1 X_3 + \lambda_2 W_{trade} + w_{t'} \quad (2)$$

where γ_0 is the model constant; γ_1 is the coefficient reflecting the impact of food product turnover on selling costs; γ_i are coefficients reflecting the effect of assortment structure on the cost component of sales; λ_1 is the coefficient for the assortment concentration indicator; λ_2 is the coefficient for the average wage in trade; w_t is the random error. Inclusion of X_3 allows the model to capture the effect of assortment concentration on logistics and operational costs associated with selling food products.

Model 3. Operating profitability (separately by trade format):

Specialised stores:

$$R_t^{spec} = \delta_0^{spec} + \delta_1^{spec} T_t - \delta_2^{spec} S_t + \sum_{i=1}^n \delta_i^{spec} a_{i,t} + \theta^{spec} X_3 + \xi_t^{spec}, \quad (3)$$

Non-specialised stores:

$$R_t^{nonspec} = \delta_0^{nonspec} + \delta_1^{nonspec} T_t - \delta_2^{nonspec} S_t + \sum_{i=1}^n \delta_i^{nonspec} a_{i,t} + \theta^{nonspec} X_3 + \xi_t^{nonspec}, \quad (4)$$

where $\delta_0^{spec}, \delta_0^{nonspec}$ are the constants of the respective models; $\delta_1^{spec}, \delta_1^{nonspec}$ are coefficients reflecting the effect of food product turnover on operating profitability; $\delta_2^{spec}, \delta_2^{nonspec}$ are the impact of selling costs on operating profitability; $\delta_i^{spec}, \delta_i^{nonspec}$ are the differentiated impact of assortment structure on profitability for each trade format; $\theta^{spec}, \theta^{nonspec}$ are coefficients for the assortment concentration indicator; $\xi_t^{spec}, \xi_t^{nonspec}$ are the random errors of the respective models.

Thus, the proposed cascading economic and mathematical model enables a comprehensive assessment of the impact of food product

assortment policy on the key economic outcomes of trading enterprises through sequential modelling of turnover, selling costs, and operating profitability. The cascading structure ensures alignment between the structural characteristics of the assortment and financial and economic indicators, while also allowing identification of the differentiated effects of assortment factors depending on the trade format. The modelled results have formed a conceptual framework for further quantitative assessment of the efficiency of assortment decisions and the development of practical proposals for optimising the assortment policy of trading enterprises. The modelled forecast of main economic performance indicators of trading enterprises in the food product segment for 2026-2027 was compiled based on the official statistical information of the State Statistics Service of Ukraine, which was used as input variables for the cascading economic-mathematical model. The forecast does not include the year 2025, since it is already completed, and it is focused on the postcrisis recovery phase of trading activity. The forecast was compiled by inertial extrapolation of the time series of food product turnover and subsequent calculation of selling costs and operating

profitability according to the estimated modelled dependencies. This made it possible to bring projected values in line with the actual dynamics of retail trade, in accordance with the logic of the cascading model. The projected economic indicators are interpreted in terms of the assortment concentration parameters, identified at the previous stages of the study. The assortment concentration is understood as the degree of concentration of food product turnover in a limited range of product categories and assortment items that account for the bulk of sales. It was found that in non-specialised stores, a high concentration of turnover is characteristic of everyday consumer goods with fast turnover and low assortment diversity, which provides large sales volumes, but is accompanied by high selling costs. In specialised stores, the concentration is lower, but the greater depth of assortment provides a higher level of operating profitability. During the forecast period, it is assumed that the structure of assortment concentration will be preserved inertially, which makes it possible to consider the changes in economic indicators as the result of the efficient use of the existing assortment, rather than the exogenous expansion of the assortment (Table 9).

Table 9. Modelled forecast of key performance indicators for trading enterprises in the food product segment by trade format, 2026-2027

Indicator	Year		
	2024 (actual/ estimate)	2026 (forecast)	2027 (forecast)
Turnover of food products, million UAH, including:	651.60	788.40	867.20
specialised stores	19.50	23.70	26.00
non-specialised stores	632.10	764.70	841.20
Selling expenses, million UAH, including:	147,469.80	198,400.00	222,300.00
specialised stores	1,330.40	1,780.00	1,990.00
non-specialised stores	146,139.40	196,620.00	220,310.00
Operating profitability, %			
specialised stores	12.51	13.2	13.6
non-specialised stores	10.79	11.4	11.8

Source: developed by the authors

The growth of the food product turnover in non-specialised stores in 2026-2027 is predicted by the forecast calculation to be accompanied by a high concentration of assortment, when the sales volumes are formed by a limited number of commodity groups. This model allows

scaling the turnover, but at the same time, there is an unevenly large increase in the costs of sales, which limits the expansion of the possibilities for improving the operating profitability. In specialised stores, despite the low share of total turnover, the moderate concentration of the

assortment and the great depth of differentiation of the products make it possible to maintain a higher level of profitability. This confirms the assumption that the optimisation of the assortment structure has a greater impact on the financial result than the growth of sales volumes. Thus, the concentration of assortment acts as a transmission mechanism between the turnover, sales costs and operating profitability of trading enterprises. The results confirm the practical importance of using the assortment policy as an instrument for managing the business performance. In particular, for non-specialised stores, it is necessary to monitor the concentration of turnover in order to avoid high costs, while for specialised stores, it is important to preserve the depth and diversity of the assortment in order to increase the margin. The modelled forecast for 2026-2027 confirms the validity of the cascade approach to assessing the economic indicators of trading enterprises in the food product segment. The future development of the business is determined not only by the dynamics of turnover, but also by the parameters of the concentration of the assortment, which has a direct impact on sales costs and profitability. Optimising the structure of the assortment can have a positive financial effect even without growth in sales volumes, while the mechanical increase in the turnover, not considering the concentration, does not lead to an improvement in operational efficiency.

The results of this study are consistent with the current state of the literature on the assortment policy and the optimisation of the product offer in retail. In particular, the systematic review of J. Heger & R. Klein (2024) showed that assortment optimisation is a key lever for managing demand and profitability in a wide range of industries, including the food retail sector, and that there are different approaches to the mathematical modelling of assortment decisions, depending on the behaviour of consumers and the constraints of the enterprise's activity. The models of decision support management for assortment, shelf space allocation and replenishment, which have been reviewed, stress the need for integrating assortment optimisation with space and logistics constraints. In particular, A. Hübner & H. Kuhn (2024) proposed an integrated assortment management, shelf space allocation

and replenishment model for fast-moving food products. This management model confirms the results of the present research in terms of the need to integrate not only the structural assortment characteristics, but also the operational characteristics of trading enterprises to achieve economic efficiency. The research by O. Arhami *et al.* (2024) also stressed the need for integrating dynamic assortment planning and capacity allocation in a multi-period setting with active demand learning. Therefore, assortment management should be adjusted not only in terms of the static structure of product categories, but also in terms of time-varying demand and capacity constraints, which directly affect the turnover and financial result of the enterprise, especially under uncertainty and limited resources. The results of these recent studies are consistent with the results of the present research, which showed that the structural optimisation of the assortment (not only in terms of breadth or depth, but also in terms of adaptation to the behavioural and operational market characteristics) is an essential condition for the economic efficiency of enterprises operating in the food sector. The comparison of the results of the present research with the research on assortment management in a general marketing context also shows that the assortment policy and consumer behaviour relationship is ambiguous. For example, the research by A.M. Turri & A. Watson (2022) found that, in general, consumers react positively to broader assortments, as they increase the probability of finding the right product, which yields a competitive advantage for retail enterprises. These results are consistent with the present research, in which the concentration of sales volumes in the core product categories provides stable turnover and economic efficiency.

In addition, assortment policy is of particular importance for the strategic management of enterprises, especially in the food sector. The literature review showed that assortment design is not only a function of marketing, but also of management, which ensures the optimisation of turnover and profitability. For instance, in the meta-analytic study, R. Sethuraman *et al.* (2022) pointed out that the size of the assortment is one of the most important factors that affect consumer behaviour in the majority of product

categories. Similarly, the research outcomes of H. Karimi (2024) stressed that joint optimisation of assortment and promotional policies may have a significant impact on the profitability of retail chains, which is in line with the implication of the current study that an integrated assortment policy is a prerequisite for fulfilling the financial performance goals of a company. The algorithmic decision support approaches to assortment management have the same orientation. Thus, the study by O. Iurasova (2025), for example, suggests an algorithm for the optimal management of assortment, inventory, and distribution of goods based on mathematical modelling. The implication of this study is consistent with the current study's conclusion about the need for using quantitative models to analyse the influence of assortment policy on the main economic results. Therefore, a comparison of the current results with recent international studies indicates that assortment optimisation in the context of models of consumer behaviour, logistics, and integrated planning is still a topical problem in retail science. The findings of the current study complement and enhance these implications by adapting them to the specifics of the food products and the Ukrainian market. Based on this, the results of the study enable the formulation of several practical and methodological implications. In particular, the results confirm the need to assess the effectiveness of assortment policy not by separate indicators but by a consecutive chain of influence on turnover, distribution costs, and operating profitability. The suggested approach can be used as an analytical instrument for comparative analysis of assortment solutions in specialised and nonspecialised retail formats, as well as for the identification of reserves for improving the economic efficiency without thoughtless expansion of the assortment. Simultaneously, the model can serve as a methodological basis for subsequent studies directed toward its adaptation to other groups of goods, retail formats, or conditions of market uncertainty.

CONCLUSIONS

The results of the study show that the assortment policy in the food market determines the economic efficiency of trade enterprises in Ukraine. Based on the analysis of the assortment

structure, sales dynamics and financial performance of trade enterprises, it was found that the width, depth and concentration of the assortment have a significant impact on the turnover, distribution costs and operating profitability. The application of the cascade economic and mathematical model made it possible to formalise the cause-and-effect relationships between the microeconomic indicators of the assortment, the mesoeconomic demand and financial results of enterprises, and to identify the differences in the sensitivity of profitability to changes depending on the retail format (specialised and non-specialised trade enterprises). The results of the modelling demonstrate that the optimisation of the assortment structure, a balanced combination of mass and niche product categories and efficient management of SKUs contribute to improving the operational efficiency and reducing distribution costs. At the same time, the macroeconomic environment, namely, the level of household incomes and food security, predetermines the conditions for the implementation of assortment policy. The main factors that influence the economic efficiency of specialised trade enterprises are turnover and assortment concentration, while those of non-specialised trade enterprises are cost control and strategic assortment expansion. The forecast for 2026-2027 shows an increase in turnover, distribution costs and operating profitability for both formats of trade enterprises. Non-specialised trade enterprises will increase sales volumes while increasing costs, while specialised trade enterprises will keep the level of margin unchanged due to assortment differentiation. Trade enterprises that will adjust the assortment structure to the specifics of the network and consumer demand will increase the operating profitability and strengthen the market positions. The directions for further research are the study of assortment policy influence on the economic efficiency in the context of trade digitalisation, online distribution channels and changing priorities of consumer behaviour, as well as the study of assortment influence on healthy nutrition and food market resilience.

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CONFLICT OF INTEREST

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Асортиментна політика у товарознавстві продовольчих товарів України та її вплив на економіку торговельних підприємств

Анотація. Асортиментна політика продовольчих товарів є ключовим фактором, що визначає ефективність діяльності торговельних підприємств і конкурентоспроможність роздрібного ринку. Вона впливає на формування товарообороту, витрат на збут та рентабельності операційної діяльності, а також відображає поведінку споживачів та їхні пріоритети. Метою роботи була формалізація причинно-наслідкових зв'язків між структурними

характеристиками асортименту та економічними результатами діяльності торговельних підприємств, а також визначення диференційованого впливу асортиментних факторів залежно від формату торгівлі. У дослідженні використано методи бібліографічного аналізу, групування, аналіз часових рядів, економіко-математичне моделювання, включаючи каскадну модель впливу структури асортименту на товарооборот, витрати на збут та рентабельність операційної діяльності, а також логічне узагальнення. Результати свідчать, що ширина, глибина та концентрація асортименту істотно визначають економічні показники підприємств. Для спеціалізованих магазинів критичними є управління товарооборотом і концентрацією продажів, тоді як для неспеціалізованих – контроль витрат на збут і оптимізація структури асортименту. Використання каскадної моделі дозволяє кількісно оцінити внесок кожної товарної категорії та агрегованих показників асортиментної політики у фінансові результати. Макроекономічні фактори, зокрема доходи населення та рівень продовольчої безпеки, формують контекст реалізації асортиментної політики та впливають на ефективність її впровадження. Практична цінність дослідження полягає у наданні рекомендацій для торговельних підприємств щодо оптимізації асортименту, підвищення рентабельності та конкурентоспроможності. Результати можуть бути корисними для бізнесу, державних органів і науковців при розробці стратегій розвитку роздрібно торгівлі та вдосконаленні управління асортиментною політикою

Ключові слова: структура товарного асортименту; роздрібна торгівля продуктами; економічна ефективність; фінансові результати; витрати на реалізацію; операційна рентабельність