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GEOSPATIAL DIFFERENTIATION OF THE IMPACT OF RETAIL NETWORKS ON ECONOMIC GROWTH IN THE REGIONS OF UKRAINE

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Abstract. Globalization and Ukraine's integration into the global economy are accompanied by the growing influence of international retail networks on regional development. Networks such as "SPAR," "METRO Group," and "Auchan" play a key role in the transformation of the consumer market, influencing the structure of the country's economy. This study analyzes the geospatial aspects of retail network expansion and assesses their contribution to the economic development of regions. Special attention is given to the impact on infrastructure development, job creation, the competitiveness of local producers, and changes in consumer behavior. The paper defines the role of international networks in strengthening Ukraine's integration into global trade chains and offers a forecast for the development of the retail sector in the context of the economic and spatial specifics of the regions.

Key words: international retail networks, regional development, globalization, economic growth, competition, infrastructure, employment, spatial aspects.

Introduction. The development of retail trade networks in Ukraine is one of the key trends in the modern economy. The emergence of large shopping centers and supermarkets significantly changes consumer behavior, shapes new supply chains, and impacts regional development. However, the influence of these networks on the economic growth of various regions in Ukraine is ambiguous and varies depending on a number of factors.

Geographical location, the level of infrastructure development, the specifics of local production, and state policy – all influence how retail networks affect the

economy of a region. Therefore, there is a need for a more detailed study of the geospatial differentiation of this influence.

The aim of this research is a comprehensive analysis of the impact of retail trade networks on the economic growth of Ukraine's regions, taking into account their geographical characteristics.

In Ukraine and globally, retail networks demonstrate significant diversity in the scale of their operations. Based on geographical coverage, they can be classified into several categories:

International networks – these are global players with a presence in many countries, including Ukraine. Their distinguishing features are a wide range of products, high service standards, and robust logistics systems.

National networks – these networks cover a large part of Ukraine’s territory, with an extensive store network and play a crucial role in shaping the national market.

Regional networks – focused on specific regions of the country, they are well attuned to the needs of local populations and often offer a more personalized approach to customer service.

Local networks – the smallest in scale, these networks operate within one or several regions. They typically specialize in a narrow range of goods or services and are often known for their family traditions and loyalty to local producers.

This classification allows for not only understanding the scale of retail networks' operations but also analyzing their competitiveness and market influence. In addition to geographical coverage, networks are also categorized by format (discount stores, supermarkets), specialization, and pricing levels. This level of detail helps to understand how different types of networks compete with each other and meet the needs of various consumer segments.

In Ukraine, national networks are the most represented, well-adapted to local conditions and consumer needs.

At the same time, international players such as METRO, SPAR, and Auchan are actively developing in the Ukrainian market, offering new retail formats and a wide product range. Their presence intensifies competition, stimulates market development, and contributes to improved service quality [1], in table.1.

Table 1.

Largest International Retail Networks in Ukraine in 2023
Compiled by the authors based on the data [1-8]

Retail Chain	Year Founded	Country of Origin	Year Opened in Ukraine	Cities in Ukraine
1	2	3	4	5
Auchan	1961	France	2008	Kyiv, Lviv, Chernivtsi, Zhytomyr, Dnipro, Odesa, Irpin, and Bucha
METRO Group	1964	Germany	2003	Kyiv, Dnipro, Odesa, Kharkiv, Lviv, Kryvyi Rih,

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				Poltava, Vinnytsia, Zaporizhzhia, Chernivtsi, Mykolaiv, Rivne, Ivano-Frankivsk, Zhytomyr, Ternopil, Lutsk, and Chernihiv
SPAR	1932	Netherlands	2001	Lviv, Rivne, Zhytomyr, Ternopil, Lutsk, Ivano-Frankivsk, Uzhhorod, Kharkiv, Sumy, Chernivtsi, Vinnytsia, Khmelnytskyi, Poltava, Kyiv, Odesa

The "SPAR" network was the first among international retail chains to enter the Ukrainian market, laying the groundwork for further development of this market segment [2]. The highest concentration of "SPAR" stores is observed in the western regions of Ukraine, indicating the company's successful adaptation to the specifics of the local market [3].

The "METRO" network launched its operations in Ukraine in 2003. The company opted for the Cash & Carry format, targeting entrepreneurs and small businesses [1]. As of 2023, the network boasts 24 stores located in most regional centers of Ukraine. Such a uniform geographical distribution reflects the company's strategy aimed at reaching a wide audience across the country. Over 20 years of operation in Ukraine, "METRO" has invested over 600 million euros in the economy, signifying a substantial contribution to the development of the Ukrainian market [7].

The "Auchan" network joined the Ukrainian market in 2008. The French retailer concentrated on the hypermarket format, offering a wide range of products at competitive prices. The "Auchan" network is present in 9 Ukrainian cities, predominantly in the central, southern, and eastern parts of the country [5]. Despite a later entry, the company is actively developing and occupies a significant niche in the Ukrainian market.

A comparison of the "METRO" and "Auchan" networks reveals distinct development strategies. "METRO" has prioritized the Cash & Carry format and a uniform geographical distribution of stores, whereas "Auchan" has focused on large hypermarkets in major cities. Both networks have made substantial contributions to the development of the Ukrainian retail market, providing consumers with a wide range of products and a high level of service.

Table 2.

SWOT Analysis of the Largest International Retail Chains in Ukraine as of 2023

Compiled by the authors based on the data [2, 4, 5, 6, 7, 8]

Retail Network	Strengths	Weaknesses	Opportunities	Threats
1	2	3	4	5
Auchan	- High brand recognition due to long-term presence	- Limited number of stores compared to competitors (as	- Expansion of presence in small and medium-sized cities.	- Economic instability in Ukraine (including

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	<p>in the Ukrainian market.</p> <ul style="list-style-type: none"> - A wide range of products catering to various consumer categories. - Innovative business management approaches [5]. 	<p>of 2023 – only in 8 cities of Ukraine).</p> <ul style="list-style-type: none"> - Dependence on imported goods, increasing vulnerability to currency fluctuations. 	<ul style="list-style-type: none"> - Implementation of loyalty programs targeted at regional consumers. - Improvement of marketing strategies to attract new customers. 	<p>decreased purchasing power).</p> <ul style="list-style-type: none"> - Increased competition in the retail market. - Risks due to energy disruptions and inflationary processes.
METRO Group	<ul style="list-style-type: none"> - The widest geographical coverage among international networks in Ukraine (presence in 16 cities). - Strong focus on serving corporate clients (wholesale trade). - High level of logistical optimization [6, 7]. 	<ul style="list-style-type: none"> - Limited appeal to retail customers due to greater focus on wholesale purchases. - Insufficient adaptation of the product assortment to regional needs and population preferences. 	<ul style="list-style-type: none"> - Expansion of product assortment for retail customers. - Increasing cooperation with Ukrainian manufacturers. - Implementation of innovative ecological standards in logistics and store operations. 	<ul style="list-style-type: none"> - Growing regulatory requirements for international companies. - Inflation and decreased consumer spending. - Competition with local networks that are better adapted to the Ukrainian market's specifics.
SPAR	<ul style="list-style-type: none"> - Large number of retail outlets in regions (over 200 stores in 15 cities of Ukraine as of 2023). - Franchise model that promotes local adaptation of product assortments to consumer needs. - Expanded network of local partners [2, 4]. 	<ul style="list-style-type: none"> - Dependence on franchisees in regions (risk of inconsistent service quality). - Lower brand recognition compared to other international networks such as Auchan or METRO Group. 	<ul style="list-style-type: none"> - Growth of online sales and implementation of digital services for customers. - Increasing demand for eco-friendly and organic products, which the network is actively integrating. - Strengthening partnerships with local producers. 	<ul style="list-style-type: none"> - Instability of the economic environment. - High dependence of purchasing activity on seasonal factors and economic crises. - Competition from other international and local players, especially in regions with low purchasing power.

Analysis of the Operations of Major International Retail Networks in Ukraine Based on SWOT Matrix (Table 2) allows identifying key factors that determine their impact on the economic development of various regions. The main retail networks: Auchan, METRO Group, and SPAR, develop differently in different cities, reflecting the differences in the economic potential and infrastructure conditions of each region [4, 5, 7, 8].

Analysis of the Auchan Network. Due to its long-term presence in the market, Auchan demonstrates a strong infrastructure base in large cities such as Kyiv, Lviv, and Odesa. However, its limited presence in medium and small cities restricts access to goods for a large part of the population, especially in the western and central regions of Ukraine. The network also faces economic challenges due to its dependence on

imported goods, which may complicate pricing policies amid economic instability. Therefore, although the network has great potential for expansion, its impact on economic growth in Ukraine requires further adaptation to regional needs [5, 8].

Analysis of the METRO Group Network. METRO Group has the widest coverage among international networks, giving it a significant advantage in terms of economic influence on Ukrainian regions. Its focus on wholesale trade and serving corporate clients has a substantial impact on the economic growth of industrial and manufacturing regions such as Kharkiv, Lviv, and Dnipro. However, the network's focus on the wholesale segment does not always meet the needs of retail customers in less urbanized areas. Expanding the product assortment for retail customers and developing new online platforms could stimulate its influence on the country's economic situation, particularly in central and western regions [6, 8].

Analysis of the SPAR Network. SPAR demonstrates flexibility due to its franchise model, which allows it to adapt its assortment more quickly to the needs of local consumers. This model is an important factor for economic growth in smaller cities, such as Ternopil, Ivano-Frankivsk, and Lutsk, where the network has more opportunities for expansion. However, less developed infrastructure and lower brand recognition limit the network's ability for large-scale growth. Considering the trend towards increased online sales, SPAR has the potential to increase its influence on the economy if it focuses on digitalization and improving logistics capabilities [2, 4, 8].

Geospatial Differentiation of Influence:

Large Cities (Kyiv, Odesa, Lviv, Kharkiv): international networks with the largest resources, such as METRO Group and Auchan, have a significant economic impact. This is reflected in high competition in the market, an increase in the number of jobs, and stimulation of economic development through increased demand for consumer goods and services. At the same time, these cities exhibit greater stability in infrastructure development and more investment in retail trade.

Small and Medium Cities (Ternopil, Chernivtsi, Zhytomyr, Uzhhorod): Networks such as SPAR can have a greater influence due to their higher adaptability to local conditions. However, their impact is limited by lower economic activity compared to large cities. Network expansion in these cities is possible if companies can effectively use local resources and optimize their logistical channels.

Conclusions. International retail networks, such as METRO, SPAR, and Auchan, play a crucial role in supporting Ukraine's economic stability, especially during times of war, by providing essential goods to the population and supporting local production. Their activities contribute not only to the integration of the Ukrainian economy into international supply chains but also to the development of small and medium-sized businesses, creating new jobs, which is particularly important for regions that have suffered significant economic losses during the conflict.

The study shows that international networks have a significant impact on the geospatial differentiation of economic growth in Ukraine. In particular, networks like METRO and SPAR, which have broad geographical coverage, contribute to the development of the economies of both large and small cities. Thanks to their extensive networks, they provide access to a wide range of goods, boosting economic activity in

various regions of Ukraine. Although the Auchan network has fewer outlets compared to the others, it continues to operate actively in large cities, providing a high level of service and stimulating infrastructure development.

One of the key aspects revealed during the analysis is the adaptation of international networks to the conditions of economic instability and war. The METRO and SPAR networks demonstrated the ability to quickly adjust their strategies, including restructuring supply chains and focusing on expanding the range of locally produced goods. This not only helped support domestic businesses but also contributed to increasing the competitiveness of Ukrainian products in global markets.

Special attention should be given to the social responsibility of these companies. International networks actively support humanitarian initiatives, provide assistance to regions affected by the war, and engage their employees in volunteer activities. This positively impacts the image of the companies and enhances their social responsibility in local communities.

Thus, international retail networks in Ukraine contribute not only to the stabilization of the economy but also to the formation of new economic models that respond to contemporary challenges. Their investments in infrastructure and logistics technologies improve the efficiency of the economy and ensure the flow of goods to regions even in difficult economic conditions. At the same time, the geospatial differentiation of retail trade in Ukraine highlights the need for further development of adapted business models that take into account local characteristics and consumer needs.

References:

1. International Retail Networks Worldwide and Their Development in Ukraine. URL: <https://internationalconference2014.wordpress.com/2015/12/15/>
2. SPAR International Annual Review 2022. URL: <https://spar-international.com/>
3. "SPAR" Supermarket Franchise. URL: https://franch.spar.ua/?utm_source=Adwords&utm_medium=Media&utm_campaign=PerformanceMax20.11.2024
4. Official Website of the "SPAR" Retail Network. URL: <https://spar.ua/>
5. Official Website of the "Auchan" Retail Network. URL: <http://www.auchan.ua/>
6. Metro Group Annual Report 2022. URL: <https://www.metroag.de/>
7. Official Website of the "METRO Group" Retail Network. URL: <https://www.metro.ua/>
8. Retail Trade in 2023: Modern Trends and Retail Development Forecasts by InVenture. URL: <https://inventure.com.ua/uk/analytics/articles/rozdrubna-torgivlya-u-2023-roci:-suchasni-trendi-ta-prognozi-rozvitku-ritejlu>