

## ASSESSMENT OF THE LOGISTICS SECTOR BASED ON A SWOT ANALYSIS

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**Purpose:** The aim of the paper is to identify and assess internal and external factors influencing the development of small and medium-sized enterprises operating in the logistics sector. The study focuses on determining the strategic position of logistics SMEs using SWOT analysis as a tool supporting strategic diagnosis.

**Design/methodology/approach:** The research is based on a SWOT analysis conducted using empirical data obtained from a survey of logistics SMEs. The identified factors were classified into four groups: macroeconomic factors, innovation and cooperation, social aspects and human resource development, as well as spatial aspects and infrastructure. Each group was assigned a weight reflecting its relative importance. The methodological approach combines qualitative analysis with a quantitative weighting of factors. The theoretical background of the study is grounded in strategic management and logistics literature.

**Findings:** The results indicate that logistics SMEs demonstrate strengths mainly in the areas of innovation, cooperation and the application of modern technologies. The main weaknesses are related to limited financial resources and shortages in qualified personnel. Opportunities are associated with macroeconomic conditions and the development of transport and logistics infrastructure, while threats result primarily from market instability, increasing operating costs and competitive pressure.

**Research limitations/implications:** The study is limited by the size and structure of the research sample, which may affect the representativeness of the results. Further research could expand the scope of analysis by including a larger number of enterprises or by applying additional strategic analysis methods.

**Practical implications:** The findings may support managers of logistics SMEs in identifying priority areas for strategic actions, particularly in the fields of innovation, human resource development and cooperation with external partners.

**Originality/value:** The paper provides an empirically based SWOT analysis of logistics SMEs with weighted strategic factors. It contributes to the literature by offering a structured assessment useful for both academic research and managerial practice.

**Keywords:** SWOT analysis; logistics sector; SMEs; strategic management.

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

## 1. Introduction

The aim of this study is to present the possibilities of using SWOT analysis to identify key internal factors (strengths and weaknesses) and external factors (opportunities and threats) in the logistics sector. SWOT analysis is a tool used to examine the internal and external environment of a company in order to determine its current position and forecast its future position on the market by selecting an appropriate operating strategy. This method gained popularity in Poland when it was a formal requirement during the privatisation of companies and when applying for bank loans, as it allowed the condition of a company to be assessed. It is still used in business today as a basic analysis of listed companies (Kowalik, Klimecka-Tatar, 2017, pp. 152-162; Matusznyi, 2020, pp. 36-40).

The name SWOT is an acronym of the English words: strengths, weaknesses, opportunities and threats. SWOT analysis is conducted by identifying factors that influence the company's operations and classifying them into the above four categories, creating a clear matrix (Ab Talib, Hamid, 2014, pp. 322-343). The resulting list is subject to further examination. The first step is to assign weights to individual factors so that the sum of the weights in each category is equal to 1. Next, four tables are developed to form the SWOT analysis ('from the inside out'), which contain answers to questions about how internal factors (strengths and weaknesses) affect external factors (opportunities and threats). One way to do this is to identify dependencies in a 0/1 system (0 – no connection, 1 – dependency). The next step is to count the number of interactions for each row and column separately and sum them up for the entire table. A rank is determined for each group of factors, depending on the value achieved. After adjusting the results by weight, a weighted number of interactions between the two categories is obtained (Bryszawska, Kulesza, 2022, pp. 1-11).

The SWOT analysis can be expanded to include a TOWS (outside-in) analysis, which shows how the external environment affects the company (Szmítka, 2015, pp. 79-98). The SWOT-TOWS analysis is summarised in a table containing the number and weighted number of interactions, which is the sum of SWOT and TOWS links. The highest weighted value indicates the strategy that the company should adopt. There are four strategies: aggressive-maxi-maxi (when strengths and opportunities prevail; the company should strive for growth and invest to strengthen its market position); competitive mini-maxi (if weaknesses and opportunities are the most important; take advantage of a favourable external environment to minimise negative factors within the company); conservative-maxi-mini (when strengths and threats prevail; the company should use its strengths to minimise major threats in the environment) and defensive-mini-mini (when weaknesses and threats prevail; the least favourable analysis, in which the company must fight for survival) (Jagodziński, Szewczyk-Jarocka, Uździecki, Lipińska, 2012, pp. 112-131; Mierzwa, Goliszek, 2017, pp. 330-340; Oziębło, 2022, pp. 235-264; Skotnicka-Zasadzień, Zasadzień, Grebski, 2023, pp. 541-551).

Scientific studies emphasise that SWOT analysis is not perfect or comprehensive, but it is a fundamental tool for strategic analysis, and its results provide valuable information and guidance for conducting more in-depth research on the issue in question.

## 2. Materials and methods

One of the most popular strategic analysis techniques is SWOT analysis. In general terms, it is an examination of an organisation's strengths and weaknesses, as well as the opportunities and threats it faces. An organisational strategy developed using this method is based on the use of those aspects of the company's operations that are considered to be current strengths and future opportunities. In order to achieve its basic objectives, the strategy should aim to reduce or eliminate weaknesses. The list of identified threats indicates those phenomena and processes within the organisation and its environment that must be taken into account, as they may disrupt or even prevent the achievement of strategic objectives.

The name of the method comes from the first letters of the words describing the essence of the subject of analysis, i.e. strengths, weaknesses, opportunities and threats. In the literature, you can find terms such as TOWS or WOTS to describe this analysis. The order of the letters is not random, because SWOT analysis proceeds from the inside of the company to the outside, while TOWS analysis does the opposite, and TOWS/SWOT analysis combines both.

The concept of WOTS analysis is used by A. Sharplin, who emphasises forecasting organisational development based on exploiting opportunities in the environment and minimising or eliminating threats (Bryszawska, Kulesza, 2022, pp. 1-11). The second abbreviation (TOWS) was proposed by H. Weihrich, who emphasises the sequence of problem solving in strategy formulation processes (Stabryła, 2017).

The examination of an entity's strengths and weaknesses is carried out in relation to all its areas of activity and/or across one or only selected areas (e.g. marketing, finance), depending on the purpose of the diagnosis (Stabryła, 2017). SWOT analysis can be applied equally successfully to any venture, organisation or entity, within which the factors essential to their functioning should be considered. The main areas to be considered are: consumers, products, financial situation, manufacturing, i.e. production processes, manufacturing costs, marketing, research and development, operational activities and support processes, patents, contacts and trade agreements, and manufacturing technology.

There are four basic groups of factors:

- a) marketing, e.g. trademarks, distribution, product ranking, prices, sales opportunities, marketing systems,
- b) financial, e.g. cost of capital, financial liquidity, profitability, asset structure, price-to-earnings ratio,

- c) production, e.g. manufacturing capacity, age of equipment (degree of modernity), production systems, quality control, economies of scale,
- d) personnel, e.g. staff, adaptability, planned labour resources, industrial relations, working conditions (Kowalik, Klimecka-Tatar, 2017, pp. 152-162).

In conclusion, SWOT analysis constitutes a comprehensive and versatile tool for strategic diagnosis, enabling a structured assessment of both internal and external factors influencing an organisation's development. By systematically identifying strengths and weaknesses alongside opportunities and threats, the method supports informed decision-making and the formulation of coherent strategic directions. Its flexibility allows for application across various organisational contexts and functional areas, making it particularly valuable in strategic planning processes. Consequently, SWOT analysis serves not only as a diagnostic framework but also as a foundation for aligning organisational resources with environmental conditions in pursuit of long-term objectives.

### 3. Research results

A SWOT analysis was carried out for the logistics industry in the SME sector on the basis of the companies surveyed. The analysis included:

- a) diagnosis, which identified:
  - strengths - the qualities of the organisation that distinguish it positively from its environment and competitors,
  - weaknesses - are a consequence of resource constraints and insufficient qualifications; every organisation has aspects of its functioning that limit its efficiency, but quick and objective recognition and definition can easily limit their negative impact,
- b) forecasts, which describe
  - opportunities – phenomena and trends in the environment that, if properly exploited, will become an impetus for development and weaken threats,
  - threats – all external factors that we perceive as barriers to the company's development, obstacles, additional operating costs.

The separability of factors is related to an element of SWOT analysis – assigning importance to factors. Different factors may have different significance in a given market situation in which an entity finds itself. The importance of factors is determined in such a way that the sum of the weights for each group of factors is equal to 1.0 (100%).

The SWOT analysis was developed into four main groups of factors, which were assigned appropriate weights:

- macroeconomic factors – weight 0.25,
- innovation, cooperation, technologies – weight 0.35,

- social aspects, human resource development – weight 0.15,
- spatial aspects, infrastructure – weight 0.25.

The result of the analysis is the creation of four tables:

- strengths that should be reinforced,
- weaknesses that need to be eliminated,
- opportunities that should be exploited,
- threats that should be avoided (table 3).

**Table 1.**

*SWOT analysis – macroeconomic factors*

<b>MACROECONOMIC FACTORS – weighting 0.25</b>	
<b>STRENGTHS</b>	<b>WEAKNESSES</b>
<ul style="list-style-type: none"> <li>- significant and growing importance in the economy,</li> <li>- relatively strong competition in the industry,</li> <li>- relatively high degree of adaptation of the sector to the requirements of customers from the European Union,</li> <li>- rapid adaptation to changes in demand,</li> <li>- easy access to distribution channels,</li> <li>- low share of foreign capital – independence of enterprises,</li> <li>- lower labour costs than in European Union countries,</li> <li>- equipment-intensive nature – a large cash contribution is required at the start of a business, which reduces the opportunities for new businesses to start up,</li> <li>- high attractiveness of the location for industry investments,</li> <li>- high level of services.</li> </ul>	<ul style="list-style-type: none"> <li>- difficulties in breaking into the market,</li> <li>- unused service capacity,</li> <li>- lack of funds for projects,</li> <li>- low level of equity capital in enterprises,</li> <li>- insufficient promotion of the industry,</li> <li>- poorly developed system for financing highly innovative projects,</li> <li>- moderate competitive strength in relation to other companies in the country,</li> <li>- strong dependence on the global economic situation,</li> <li>- low level of utilisation of EU funds for development purposes,</li> <li>- cost-price nature of competition,</li> <li>- lack of participation by large foreign companies,</li> <li>- poor brand reputation and scale of marketing support,</li> <li>- small number of branches in the country or their absence,</li> <li>- differences in the objectives of managers and business owners,</li> <li>- lack of long-term action strategies.</li> </ul>
<b>OPPORTUNITIES</b>	<b>THREATS</b>
<ul style="list-style-type: none"> <li>- good prospects for the development of the industry as a field of the future,</li> <li>- inclusion of the logistics industry in strategic development choices,</li> <li>- increasing and more sophisticated domestic demand,</li> <li>- entry into the euro zone,</li> <li>- expansion beyond the local market,</li> <li>- development of a strong brand,</li> <li>- use of business financing opportunities (EU funds),</li> <li>- change in the nature of competition towards quality and innovation,</li> <li>- improvement of logistics services,</li> <li>- more effective marketing activities,</li> <li>- promotion of Polish companies abroad,</li> <li>- specialisation, exploitation of market niches,</li> <li>- promotion of regional brands,</li> <li>- popularisation of modern management methods.</li> </ul>	<ul style="list-style-type: none"> <li>- prolongation of the global economic crisis,</li> <li>- deterioration of investment attractiveness – strong competition from other locations in Central and Eastern Europe,</li> <li>- high costs of improving quality,</li> <li>- high cost of capital and rising transport costs,</li> <li>- limited absorptive capacity of the Polish market,</li> <li>- difficulties in obtaining credit,</li> <li>- lack of a stable government policy supporting the SME sector.</li> </ul>

**Table 2.**  
*SWOT analysis – innovation, cooperation, technology*

<b>MACROECONOMIC FACTORS – weighting 0.25</b>	
<b>STRENGTHS</b>	<b>WEAKNESSES</b>
<ul style="list-style-type: none"> <li>- strong innovation potential,</li> <li>- high interest in services,</li> <li>- no formal barriers to entry into the sector,</li> <li>- increased awareness of existing areas of cooperation that are lacking,</li> <li>- competitive advantage based on factors other than cost – on quality and compatibility,</li> <li>- high level of computer equipment.</li> </ul>	<ul style="list-style-type: none"> <li>- insufficient cooperation with scientific and research and development centres and local government,</li> <li>- regional system for supporting innovation, development and technology transfer to the SME sector not fully implemented,</li> <li>- low percentage of expenditure on innovation,</li> <li>- small number of new technologies,</li> <li>- lack of membership in industry organisations,</li> <li>- dominance of small enterprises over large ones, with less potential in the area of innovation creation and in the area of research and financing opportunities.</li> </ul>
<b>OPPORTUNITIES</b>	<b>THREATS</b>
<ul style="list-style-type: none"> <li>- technological and organisational development,</li> <li>- development of new technological applications,</li> <li>- overcoming soft barriers to cooperation between enterprises, and thus a significant intensification of cooperation in the region,</li> <li>- openness of regional authorities,</li> <li>- increased competitiveness understood as collaboration and cooperation,</li> <li>- cooperation with local administration.</li> </ul>	<ul style="list-style-type: none"> <li>- too slow technological progress in small enterprises,</li> <li>- inconsistent and unstable state policy on science and research,</li> <li>- system of commercialisation of scientific research,</li> <li>- replication of bad practices,</li> <li>- lack of a local R&amp;D centre,</li> <li>- preference for acting alone,</li> <li>- low interest in cooperation with foreign countries,</li> <li>- poor legal protection of intellectual property.</li> </ul>

**Table 3.**  
*SWOT analysis – social aspects, human resource development*

<b>SOCIAL ASPECTS, HUMAN RESOURCE DEVELOPMENT – weight 0.15</b>	
<b>STRENGTHS</b>	<b>WEAKNESSES</b>
<ul style="list-style-type: none"> <li>- significant increase in employment,</li> <li>- highly qualified management staff,</li> <li>- progressive specialization,</li> <li>- academic centres with significant educational potential.</li> </ul>	<ul style="list-style-type: none"> <li>- lack of qualified lower-level technical and financial staff,</li> <li>- low participation of enterprises in training courses or conferences (low level of industry-specific education),</li> <li>- small number of internships for students and low level of academic entrepreneurship,</li> <li>- relatively low number of employees with higher education and technical education,</li> <li>- low participation of staff in further training,</li> <li>- mismatch of employee qualifications,</li> <li>- unfavourable age structure of human resources,</li> <li>- low employee mobility,</li> <li>- lack of trust in other companies in the industry and local authorities,</li> <li>- low productivity and work efficiency,</li> </ul>
<b>OPPORTUNITIES</b>	<b>THREATS</b>
<ul style="list-style-type: none"> <li>- possibility of applying for funding for training for the needs of enterprises,</li> <li>- systematic improvement of labour productivity,</li> <li>- increase in industry education and information flow,</li> <li>- cooperation with universities and R&amp;D units.</li> </ul>	<ul style="list-style-type: none"> <li>- decline in the number of graduates – demographic processes and decline in interest in engineering studies,</li> <li>- outflow of employees and potential increase in employment costs,</li> <li>- low level of industry-specific education,</li> <li>- insufficient stimulation of interest in staff training,</li> <li>- structural shortage of labour resources,</li> <li>- lack of motivation for young staff – low wages.</li> </ul>

**Tabela 4.***Analiza SWOT – aspekty przestrzenne, infrastruktura*

SPATIAL ASPECTS, INFRASTRUCTURE – weight 0.25	
STRENGTHS	WEAKNESSES
- very convenient transport location, - border location with Mazovia, Silesia, Lesser Poland, Subcarpathia, Łódź and Lublin provinces.	- lack of logistics centres; - poor infrastructure – condition of local and regional roads;
OPPORTUNITIES	THREATS
- improvement of road, rail and air infrastructure, - large number of new buildings, - improving social infrastructure, - opening up of foreign markets.	- unstable legal and administrative regulations hindering business development (taxes, surcharges, protracted proceedings before courts and administrative bodies), - slowdown in the real estate and construction markets.

The interconnection between opportunities and threats with the strengths and weaknesses of companies allows for the determination of a company's strategic position. After identifying strengths and weaknesses, as well as opportunities and threats, weights were assigned to individual groups of factors, corresponding to their impact on the development of the industry. The results are presented in Table 5.

**Table 5.***Point-based evaluation of individual elements, analysis forces*

	(S)	(W)	(O)	(T)
<b>Results</b>	5,70	7,85	7,20	5,95

After calculating the total number of points for each of the four forces (S, W, O, T), it is possible to determine the Market Attractiveness (MA) of the sector (on the market), which is a function of O and T (opportunities and threats) and is given by the formula:

$$AR = O / (O + T),$$

where:

O – represents the total number of points from the O (Opportunities) side of the table,

T – represents the number of points from the T (Threats) side of the table,

For the results from the table, **AR = 0.55**.

The Market Position (MP) of a company, which is a function of S and W (strengths and weaknesses), is determined by the following formula:

$$MP = S / (S + W),$$

where:

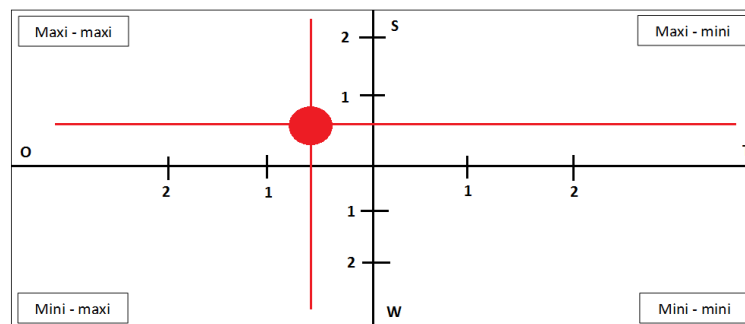
S – represents the total number of points from the table on the S (Strengths) side,

W – represents the number of points on the W (Weaknesses) side.

For the values in the table, **MP = 0.42**.

Determining the location of the point that represents the strategic position on this chart boils down mathematically to comparing the sum of points (from the tables presented earlier) on the corresponding O-T and S-W axes, whereby the rule is to subtract the smaller value from the larger one and place this difference on the axis on the side of the larger number. The intersection of the lines perpendicular to the axes passing through these points determines the strategic position of the organisation. Calculating the difference in this way prevents the occurrence of in the negative number method.

The strategic position of a company can be visually represented as a point on the graph below (depending on the total results for each category S, W, O, T).



**Figure 1.** Strategic position of the logistics sector depending on the environment and own resources.

The position of the point in the maxi-maxi field shown in the figure 1 indicates a privileged position in the market, where the sector's strategy should be focused on maintaining this position. In this case, strengths outweigh weaknesses and opportunities outweigh threats.

According to Porter, an aggressive strategy should be applied, which means that the strengths prevail in the sector under study, and the opportunities strongly related to them prevail in their environment. The companies under study from the logistics sector are able to develop intensively in the existing environment, as the set of strengths complements the opportunities of the environment. They are also able to effectively overcome threats while waiting for external conditions to improve. An aggressive strategy is a strategy of strong expansion and development that utilises both factors – the potential and strengths of a given group of companies – to minimise threats from the environment.

In the case of the companies surveyed, this approach mainly boils down to the following activities:

- creating a common policy for costs, e.g. transport strategy, training, scientific and research activities, common management software, common advertising,
- minimising price competition,
- research and development and improvement of services, and the introduction of intellectual property protection,
- cooperation with the scientific sector, in particular in the field of training, improving the quality of services, and access to the university's laboratory facilities.

According to Krzysztof Obłój, 'an aggressive (maxi-maxi) strategy consists in maximising the synergies between the strengths of the organisation and the opportunities generated by the environment. It is a strategy of strong expansion and diversified development (...)' (Piocha, Dylkiewicz, 2007, pp. 13-34).

An aggressive strategy includes activities such as: seizing opportunities, strengthening market position, acquiring organisations with the same profile, and concentrating resources on competitive products. It is a strategy that exploits the synergies between the organisation's strengths and the opportunities arising in the environment (Stabryła, 2017).

This approach to analysis determines the nature and role of the SWOT method, focusing it mainly on strategic alignment. By distinguishing between positive and negative factors, the SWOT method guidelines boil down to: avoiding threats, exploiting opportunities, strengthening weaknesses, and building on strengths.

Proper preparation of a company's action strategy requires the entrepreneur to correctly diagnose the potential of the company and its environment and the changes taking place in it. A complete and well-executed strategic analysis is half the battle in a company's strategy. It allows the right choices to be made regarding the direction and methods of the company's development. Modern planning emphasises the study of the environment, which is characterised by a lack of predictability and creates additional threats. Strategic management occurs in three stages: analysis, planning and management.

Due to the development of the environment, there has been an increase in the scientific approach to methods that facilitate the prediction of changes in the environment and make it easier to adapt to it. The seeds of the concept of corporate social responsibility have also appeared. The development of the environment led to a search for new methods and solutions, and when some methods proved ineffective, new, more effective ones appeared in their place. In recent years, the focus has been on analysis as a multifaceted approach to strategy with an emphasis on 'strategic thinking'.

## **4. Conclusions**

The main conclusions from the SWOT analysis indicate that the logistics industry has significant and multidimensional development potential, resulting from the wide range of services provided, the diverse nature of its activities and the growing importance of logistics in the economy. However, this potential remains underutilised in many areas and, in some cases, is even marginalised.

In order to increase the dynamism of the sector's development, logistics companies should, in particular, intensify inter-organisational cooperation and improve key areas of operational activity, such as warehousing, transport, marketing, customer service and information systems.

Location remains an important factor determining competitiveness – the right choice of locations for new branches helps to optimise flows and integrate transport routes. At the same time, it is necessary to maintain high standards of service quality and develop employee skills, as they are responsible for the effective implementation of innovations and flexible response to market changes.

There are also significant barriers to the functioning of logistics companies, such as high labour costs, fleet maintenance, software and infrastructure. Systematic cost control and rationalisation of expenditure are therefore key measures to reduce the risk of debt and maintain financial stability.

In an environment of intense competition and a volatile market, the implementation of modern logistics solutions, the use of advanced technologies and the search for methods to optimise processes that reduce costs and increase operational efficiency are of particular importance. Companies operating in Poland – as an integral part of the European and global market – must be prepared for the consequences of participating in complex international supply chains. The dynamics of changes in the economic environment generate pressure and introduce elements of uncertainty that cannot be ignored in the strategic planning process.

Therefore, the creation of a coherent, long-term strategy becomes a prerequisite for both the successful launch of a business and maintaining competitiveness in the market. Strategic analyses, covering both external and internal factors, enable the identification of key determinants of a company's development, the assessment of its competitive position and the identification of anticipated changes that may affect its future operations. A properly developed strategy is therefore the foundation for the proper and sustainable development of a logistics company.

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