







# “Strategy formulation activities with emphasis on strategic management tools and techniques in Slovak companies”

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# STRATEGY FORMULATION ACTIVITIES WITH EMPHASIS ON STRATEGIC MANAGEMENT TOOLS AND TECHNIQUES IN SLOVAK COMPANIES

## Abstract

The importance and benefits of strategic management in the business sphere are declared in studies worldwide. It represents an extensive area for research. The purpose of this paper is to evaluate the strategy formulation activities as well as the strategic management tools and techniques used by Slovak companies. Data on 365 manufacturing companies were obtained through an online questionnaire during 2020–2021. Selected methods of inductive statistics helped to analyze the data (the Pearson chi-square test and interval estimates for population proportion). The results show that the potential of analyzed strategy formulation activities is not filled in the Slovak companies. Enterprises only perform certain activities, and attention is focused mainly on setting strategic goals. It prevails a small orientation to sustainable development in strategic goals (only 22% of enterprises). The most used strategic management tools and techniques consist of an analysis of company resources, SWOT analysis, and customer satisfaction. From the point of view of the manufacturing area, no significant differences are defined in the use of the tools. The future management directions should include a variety of strategic management tools from the external environment. At the same time, the given tools should be supplemented with newer strategic tools ensuring flexibility and adaptation to dynamically changing conditions.

## Keywords

strategic planning, strategic goals, strategic management tools, sustainable development, manufacturing companies, Slovak business environment

## JEL Classification

L21, M10, M14

## INTRODUCTION

Strategic management has its justifiable importance considering the business management theory and business studies worldwide. From the literature in general, strategic management is mainly connected with strategic planning and decision-making processes (Ataş & Kastmoğlu, 2018); with identification of opportunities and creation of value for a company (Atta et al., 2019); with impact on business performance (Manojlović, 2017; Akhtar & Sushil, 2018; Fuertes et al., 2020; Qehaja & Kutllövci, 2020); or with creation of sustainable competitive advantage (Tapera, 2014). Strategy formulation activities and strategic management tools and techniques as a part of strategic management represent an extensive area for research, which has not yet been comprehensively investigated in the conditions of Slovakia. The examination of these areas can bring an interesting insight into the strategic management of enterprises and their possible future.

Since it is not precisely determined to what extent and which strategic management tools companies should apply, company managers look at it in their own way. However, examining the tools used can indicate certain tendencies in business management.

The development of the enterprise involves changes in the current state and changes in performance indicators. But, in many cases, improving the selected indicators or the direction of activity can worsen other activities. For example, if the goal is to maximize profit through the production of improved or new goods (and for this, it is necessary to attract additional funds), then, as a rule, bank lending is used. This worsens financial indicators, such as solvency, financial stability, or liquidity. Many such examples can be given because all indicators of a company's activity are interconnected, and the improvement of one of them often leads to the deterioration of others. When choosing a direction of development, it is necessary to analyze the interrelationship of areas of activity, such as production, marketing, personnel, and finance.

It should be noted that development requires the involvement of additional resources and, in most cases, – considerable attention. Therefore, it is impossible to develop the enterprise in all directions at the same time, and it is necessary to determine the most priority direction. Based on the chosen direction of development of an enterprise, the development strategy is created.

Thus, developing new approaches to strategic management is an urgent scientific problem, and implementing these approaches should ensure the sustainable development of an enterprise and the growth of its competitiveness.

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## 1. LITERATURE REVIEW

World practice has shown that an enterprise cannot function successfully in modern conditions without reorganizing the management system based on the principles of strategic planning. The introduction of a strategic approach to the enterprise management system, in turn, stimulates managers to better assess the strengths and weaknesses of the enterprise from the point of view of competitors, consumers, and other interested parties from the business environment. The strategic plan connects marketing, design, production, investment, and financial activities into a single system. It helps to understand the market structure, the processes of planning, promotion, and sales of products, and mechanisms of market price formation. Moreover, such a plan ensures the coordination of efforts of all functional divisions of an enterprise.

To date, a huge amount of scientific research has been conducted in strategic management (Ataş & Kastmoğlu, 2018; Qehaja & Kutllovci, 2020; R. Bahaa & S. A. Bahaa, 2021; Fu & Heyenko, 2022; Dhillon et al., 2022; Hamed & Bohari, 2022; Douha et al., 2022), significantly contributing to

the theoretical development of strategic management. However, research in strategic management does not lose its relevance.

### 1.1. Strategic planning and directions of strategic goals

Research on strategic management as a managerial discipline has increased over the last three decades (Hernández et al., 2016). It answers the managers and efficiently solves problems in a dynamic environment (Gibbons et al., 2015). In contrast, effective strategic management is a great business advantage (Esmaeili, 2015). Strategic planning is at the center of strategic management, and it consists of establishing basic strategic starting points (mission, vision, values, and goals); the strategic analysis and both parts culminate in formulating a strategy. A company should pay due attention to each mentioned phase. However, the reality can be different.

For example, Svatošová (2019, p. 1106) showed that the analyzed Czech enterprises “most underestimate the following determinants of strategic development and the process of strategic management in e-commerce: mission and vision, strategic

situational analysis, strategic control, corporate culture, personnel management and strategy, financial management and strategy, corporate culture, ability to work with legislation.” However, the study examined a broader context than the strategy formulation activities.

On the contrary, Gavrić et al. (2019) focused specifically on the company mission, and it was found that a mission is not deeply embedded in the mind of employees of Serbian companies. This result is consistent with the previous one regarding the company’s mission. Another problem is that many companies do not recognize the difference between vision and mission. An example of this situation represents the companies in Slovakia (Papulová, 2014). This is also indicated by the fact that the use of strategic planning in industrial enterprises in Slovakia is less than 25% (Benková et al., 2019). The justification of strategic planning in companies brings research pointing to the positive impact of strategic planning on business performance (Kozmenko & Savchenko, 2013; Rizan et al., 2019; Acquaah & Agyapong, 2015; Wagner & Paton, 2014; Afonina, 2015; Triyonowati et al., 2023; Nguyen, 2023). As a result of underestimating and even not implementing strategy formulation activities, it can cause the potential of strategic management is not fulfilled. Looking at the individual phases is valuable for improving the entire process. Without strategic awareness, it is impossible to carry out strategic management and business activities. For this reason, first is vital to acquire strategic awareness, which forms the basis of strategic management (Aytar & Selamet, 2021; Alsmadi et al., 2023; Tshivhase & Bisschoff, 2023; Jati et al., 2023; Bublyk et al., 2023).

Strategic goals are a necessary part of the strategic planning process. Quinn (1977, p. 29) stated, “effective strategic goals do more than provide a basis for direction setting and performance measurement. They are essential to establishing and maintaining freedom, morale, and timely problem sensing in an enterprise.” The meaning of these goals is the same; only their orientation may be subject to change. Trends can especially influence this in the external environment. Managers can establish a viable strategic ecosystem within the companies (Williams et al., 2020) while considering their own decision-making processes and,

to some extent, also considering stakeholders’ interests. This statement is supported by Landrum (2018, p. 2 cited in Grejo & Lunkes, 2022), who states that “society, governments, and shareholders call for changes in the activities of companies.”

There is mainly a requirement for sustainable development or the circular economy as contemporary trends. This can only be realized by transforming these demands by adopting a broader, long-term company vision (Evans et al., 2017). Sustainability practices can bring an improving competition advantage (Clark et al., 2015; Stachova et al., 2020), improve business performance (Adams et al., 2012; Oliinyk et al., 2023), and long-term success in the long-term perspective (Eccles et al., 2012). To maintain sustainable development, the company needs strategic leaders who possess strategic leadership in helping to achieve their intended goals (Islam et al., 2022; Meekaewkunchorn et al., 2021).

It can be stated that, on the one hand, there are typical areas of strategic goals, as stated by Fotr et al. (2017) and Drucker (1954): financial performance of a company, growth of a company, market, research and development, level of technology and investments, social area, quality of employees and motivation system, implementation of information systems, environment, etc. On the other hand, managers must also consider current trends within strategic management, e.g., sustainability topics. Their significance has increased under the influence of the pandemic challenges for companies’ management (Mishchuk et al., 2023; Cepel et al., 2022). The strategic goals of Slovak companies were also analyzed by Lesníková et al. (2022) and Rajnoha et al. (2019).

## 1.2. Strategic management tools and techniques

Strategic management tools and techniques intend to reveal customer requirements, gain a competitive position, improve market share, and identify other factors of the external environment and the influence of internal factors on the business performance (Afonina & Chalupský, 2012). These tools and techniques are also known as methods, analyses, frameworks, planning tools, strategic toolkits, strategic toolsets, models, decision tools,

etc., and they are primarily used to support the decision-making process. Regardless of the name, all strategic management tools and techniques serve the same purpose.

Knott (2006, p. 1091) deals with the deeper issue and typology of these tools, and he defines strategy tools as “the full range of concepts, ideas, techniques and approaches that structure or influence of the strategic thinking, strategic decision-making, and strategy implementation activity.” Companies worldwide use these tools and techniques. According to Aldehayyat and Anchor (2008 cited in Koseoglu et al., 2019), the most widely used and popular tools are balanced scorecard, benchmarking, PEST analysis, Porter’s five forces framework, and SWOT analysis. Another overview of tools is offered by the global management consulting firm Bain & Company in surveys that highlights manag-

ers’ use and satisfaction with management tools in different countries. Among the most used tools in 1993 belonged mission and vision statements (88%) and customer satisfaction (86%). In 2014, there were customer relationship management (46%) and benchmarking (44%) (Rigby & Bilodeau, 2018). Currently, in 2023, there is a shift from the original tools to the application of dynamic strategic planning (27%) and scenario planning (17%) (Rigby et al., 2023). This change reflects the conditions of the current time when companies should quickly adapt to new circumstances. Companies have begun to use such tools during the Covid-19 period. Table 1 shows a closer view of other strategic management tools and techniques companies use in individual countries.

The predominant tool is SWOT analysis. The view of the least used tools is also interesting. One is rep-

**Table 1.** Strategic management tools and techniques used by companies in individual countries

Source	Country	Number of respondents	Company size	The three most used tools/ techniques (or knowledge of tools*)	Correlation between the use of tools and selected characteristics
Aldehayyat and Anchor (2008)	Jordan	83	All size categories	Financial analysis PEST or STEP analysis Porter’s five forces analysis	Size and age of company
Pasanen (2011)	Finland	143	SMEs	Business strategies Mission and vision statements SWOT analysis	–
Afonina and Chalupský (2012)	The Czech Republic	74	All size categories	SWOT Customer satisfaction Price analysis	–
Kalkan and Bozkurt (2013)	Turkey	192	SMEs	Strategic planning Human resource analysis Total quality management	–
Wagner and Paton (2014)	Germany	290	SMEs	ISO 9000 Continuous improvement program Corporate identity program	Key performance indicators, company size
Nedelko et al. (2015)	Slovenia	155	All size categories	Outsourcing Benchmarking Core Competencies	Future use of tools, the desire to become familiar with tools, the share of satisfied users
Nedelko et al. (2015)	Croatia	185	All size categories	Mission and vision statements Benchmarking Core Competencies	
Nakayama (2018)	Japan	374	Not mentioned	SWOT Market share analysis Customer satisfaction	Organizational performance
Gallo and Tomčíková (2019)	Slovakia	131	Not specify	Balanced Scorecard SWOT analysis PEST analysis	Levels of management
Qehaja and Kutlllovci (2020)	The Republic of Kosovo	314	All size categories	Vision and mission statements SWOT analysis “What if” analysis	Company size, company sector
Aytar and Selamet (2021)	Turkey	130	SMEs	Risk analysis Benefit-cost analysis SCM	Sex, age, and educational status of managers

resented by the VRIO analysis (Nakayama, 2018). Another example is the balanced scorecard (BSC). Application of BSC is low in the Slovak business sphere. Rajnoha and Lorincová (2015) confirmed that this tool was used comprehensively, systematically, and regularly to manage operational and strategic performance only by 1.83% of Slovak companies. Similarly, Lesáková and Dubcová (2016) showed that only 13.73% of respondents use the balanced scorecard tool. For comparison, up to 30% of respondents were not interested in the given tool. This also corresponds to the fact that even though there is a variety of strategic management methods and tools, managers of Slovak companies do not know them or apply them correctly (Papulová & Gazová, 2016).

Nowadays, from the point of view of the number of tools used, managers use fewer tools (in the past it was over 70% of companies used the selected tools). Companies choose them carefully, whereas their overall satisfaction with tools has increased. Managers must choose those tools and techniques which can help them in the decision-making process for improving processes, products, and services and provide them with better performance and greater profit (Nouri & Soltani, 2017). Afonina (2015) also confirms the benefits of support for managers to make appropriate decisions, bringing prosperity and progress to the organizations and their employees. It should be noted that higher use of management tools is associated with a higher education level of managers (Treven, 2015). Qehaja et al. (2017) also achieved similar results.

From the perspective of countries, the highest use of tools was in companies in Asia (eight tools), followed by the USA (six tools), and less in Europe (Rigby et al., 2023). Also, Qehaja et al. (2017) focused on management tools used from the view of the country's development level (developed countries, developing countries, and transition countries) and enterprise size. Strategic management is a valuable prerequisite for success for businesses. According to Gavurová et al. (2020), in the conditions of V4 countries, strategic management is inevitable for the corporate governance of SMEs.

To summarize, several facts emerge from the mentioned studies. First, even though the importance of strategic planning or management

is undeniable, companies do not pay enough attention to the individual phases or determinants of strategic management. Second, there are demands from stakeholders to incorporate current topics such as sustainability into strategic management. Thirdly, the use of tools in the corporate sphere is different, but some tools/techniques are used more commonly than others.

The paper deals with the activities within the strategy formulation process, especially tools and techniques, whereas in these areas, the research questions (RQ1-3) and research hypotheses (H1a-d) are dedicated. The aim of this paper is to evaluate the strategy formulation activities as well as the strategic management tools and techniques used by Slovak companies. The research output is an evaluation of the current state of strategy formulation activities in companies and the highlight of the companies' positive trends and weaknesses in strategic management.

In connection with the literature review, the following research questions and hypotheses are established:

*RQ1: Which activities of the strategy formulation process do companies focus on the most?*

*RQ2: Do strategic goals reflect the trend of sustainability?*

*RQ3: How many strategic tools and techniques do companies use in practice on average?*

*H1a: There is a significant difference between company size and the use of strategic management tools/techniques.*

*H1b: There is a significant difference between company capital and the use of strategic management tools/techniques.*

*H1c: There is a significant difference between companies with different lengths of market activity and the use of strategic management tools/techniques.*

*H1d: There is a significant difference between the profitability of companies and the use of strategic management tools/techniques.*

## 2. METHODOLOGY

To answer the set research questions and take a stand on the established research hypotheses, a questionnaire survey was carried out. The questionnaire consisted of identification questions (company size, company capital, company primary activity, length of market activity, and profitability), questions related to strategy formulation activities (strategic plan activities and strategic goals), and questions about the use of selected strategic tools and techniques. The analyzed activities of the strategic plan are based on the generally known process from the strategic management theory.

Determining the company's strategic goals is modified and based on Fotr et al. (2012) and Drucker (1954). The paper deals with the following areas of strategic goals:

- 1) goals related to the company's market position;
- 2) financial goals;
- 3) social goals;
- 4) goal of long-term development (which means stability, investments, and innovations);
- 5) goal of sustainable development (goal-oriented to responsibility for own activities: environmental and social interests and performance, long-term support of community and environment); and
- 6) goal of company survival in the market.

Based on the findings in the literature review, the choice of strategic management tools was influenced by works carried out primarily in the conditions of Slovakia (e.g., Gallo & Tomčíková, 2019) as well as typically used tools for developing countries (Qehaja et al., 2017) with an assessment and adaptation to the Slovak conditions. Strategic management tools and techniques include a balanced scorecard, BCG matrix, benchmarking, customer satisfaction, customer relationship management, GAP analysis, Porter's 5F, resource analysis, risk management, STEP analysis, strategic cost analysis, supply chain management, SWOT analysis, and VRIO analysis.

The questionnaire was distributed to Slovak manufacturing companies registered by the Statistical Office of the Slovak Republic (according to NACE – European Industry-standard classification system, section C Manufacturing) using e-mail contacts (economic managers and CEOs were addressed). After checking returned questionnaires and cleaning the data, 365 fully and correctly filled questionnaires were obtained for research purposes. Generally, strategic management as such and sustainability topics are slightly different in manufacturing companies and service sectors. Examples are different competitive strategies, obtaining cost-efficient operations, and the need for different strategic thinking. That is the reason for the orientation only to manufacturing companies. The data were gathered during the years 2020–2021.

According to Yamane Taro, the minimum sample size condition was confronted with the sample size determination, which is suitable for survey research and a finite population (Uakarn et al., 2021). With a target population size of 2,504 units and the selected error  $E = 0.05$ , the minimum sample size is derived as:

$$n = \frac{2504}{1 + 2504 \times 0.05^2} = 345. \quad (1)$$

With a total of 365 questionnaires, the minimum sample size condition was met.

To test the research hypotheses, selected methods of inductive statistics for processing categorical data were applied. The Pearson chi-square test was used to test the significance of the relationship between two categorical variables. The test criterion  $G$  is defined as:

$$G = \sum_{i=1}^r \sum_{j=1}^s \frac{(n_{ij} - n_{i+}n_{+j}/n)^2}{n_{i+}n_{+j}/n} \quad (2)$$

with Chi-square distribution

$G \approx \chi^2((r-1)(s-1))$ , where  $n_{ij}$  are the frequencies of individual cells of the contingency table  $r \times s$ ,  $n_{i+}$ ,  $n_{+j}$  are the respective row and column frequencies, and  $n$  is the sample size (Box et al., 2005). By this,  $G$  statistic works with deviations of observed frequencies and frequencies expected under the validity of the null hypothesis of independence. The only assumption underlying

the test statistic is that less than 20% of the expected frequencies is very small (below five).

Interval estimates for population proportion were calculated based on:

$$P - u_{\frac{\alpha}{2}} \times \sqrt{\frac{P(1-P)}{n}} < \pi < P + u_{\frac{\alpha}{2}} \times \sqrt{\frac{P(1-P)}{n}}, \tag{3}$$

where parameter  $P$  is point estimate,  $n$  is sample size,  $u$  is critical value of Standardized normal distribution, and  $\alpha$  is the chosen estimation error (Schmidtová & Vacek, 2013).

All statistical analyses were carried out using the software package STATISTICA 12. The original output tables were consequently edited in the Microsoft Excel spreadsheet editor. For hypothesis testing, 1% and 5% alpha levels were traditionally used as the decision rule. A confidence level of 95% was used to calculate the interval estimates.

### 3. RESULTS

#### 3.1. Strategy formulation activities and strategic goals in Slovak companies

In the context of strategy formulation activities (RQ1), more than half of companies (60.27%) confirmed setting strategic goals. About 30% of companies use key performance indicators (KPIs) creation (29.86%), external environment analysis

(33.97%), and internal environment analysis (29.59%). Based on 95% interval estimates presented in Table 2, it is possible to state that 55% to 65% of Slovak manufacturing companies are dedicated to setting strategic goals. On the contrary, a few companies focus on possible proposals with strategy formulation (14.79%) and mission statement creation (15.34%). It can be said that the companies do not focus on the analyzed strategy formulation activities in the same way.

Table 3 shows an overview of the strategic goals content that companies set. Within the surveyed companies, the most frequent item, with 40.55%, was market position. Long-term development was the second most frequent strategic goal, with 33.15%. Financial goals and social goals were next in line. Sustainable development, to which the second research question (RQ2) is directed, was reflected by 22.47% of surveyed manufacturing companies. The group of given entities was formed mainly by small companies with mixed capital structure and a profit of €100-500 thousand and by large companies with mixed capital and profit above €500 thousand. Among all the studied strategic goals, there was the least reflected goal of survival.

**Table 3.** The share of surveyed companies with individual strategic goals

Strategic goals	Share of surveyed companies
Market position	40.55%
Financial goals	25.48%
Social goals	24.38%
Long-term development	33.15%
Sustainable development	22.47%
Survival	10.14%

**Table 2.** The share of investigated companies performing individual strategy formulation activities and a 95% interval estimate for the population proportion

Strategy formulation activities	Proportion of surveyed enterprises		95% Interval Estimate for Population Proportion	
	Absolute frequency	Relative frequency	Lower Limit	Upper Limit
Mission statement creation	56	15.34%	12%	19%
Vision statement creation	95	26.03%	22%	31%
Company values creation	65	17.81%	14%	22%
Setting strategic goals	220	60.27%	55%	65%
KPIs creation	109	29.86%	25%	35%
External environment analysis	124	33.97%	29%	39%
Internal environment analysis	108	29.59%	25%	34%
Proposals and strategy formulation	54	14.79%	11%	18%



**Table 4.** The frequency of occurrence of individual reasons for realization of strategy formulation activities and interval estimate of population proportions for Slovak companies

Reasons	Absolute frequency	Proportion	95% Interval Estimate for Population Proportion	
			Lower Limit	Upper Limit
The need for planning and knowledge of the changing environment and future trends	128	35.07%	30%	40%
The need for clear business direction	71	19.45%	15%	24%
The need to know the company's strengths and weaknesses	32	8.77%	6%	12%
The need to allocate corporate resources	16	4.38%	2%	6%

Table 4 lists the frequencies for individual reasons that the analyzed companies identified as decisive for the realization of strategy formulation activities. The most frequent reason, with 35.07%, was the need for planning and knowledge of the changing environment and future trends. Next was the need to clarify the clear direction of the company with 19.45%. Less frequent were the need to know the company's strengths and weaknesses (8.77%) and the need to allocate corporate resources (4.38%). Based on the given point, estimates were calculated at a 95% interval estimate for the whole population. For a third of Slovak manufacturing companies (30-40%), the need for planning and knowledge of the changing environment and future trends is the reason for strategic plan creation. For 15% to 24%, the decisive reason is also the need to clarify the clear direction of the company. For 6% to 12%, it is also the need to know the company's strengths and weaknesses. Up to 6% of companies consider the need to allocate corporate resources as a reason.

### 3.2. Strategic management tools and techniques in the Slovak business environment

From the point of view of the number of tools that companies use (RQ3), the maximum number was 11. The average number of tools/techniques per company was 3.5, a median of three tools per company. Thus, 25% of analyzed companies use one or no tools, 50% use one to five tools, and the remaining 25% use five to eleven tools within strategic management. The frequency of individual strategic management tools by companies is shown in Table 5. Nearly 60% of companies deal with the analysis of company resources. SWOT analysis is performed by 45% of companies. The more frequent tools/techniques are customer satisfaction, strategic cost analysis, supply chain management,

and STEP analysis (32% to 38%). The least frequent is VRIO analysis, with almost 4%. The results for the balanced scorecard are surprisingly inconsistent with the results published by Gallo and Tomčíková (2019), where the BSC was among the three most used tools of Slovak companies.

**Table 5.** The share of surveyed companies using individual strategic management tools and techniques

Use of strategic management tools and techniques	Share of surveyed companies
Analysis of company resources	58.36%
SWOT analysis	44.93%
Customer satisfaction	38.02%
Strategic cost analysis	37.53%
SCM	37.26%
STEP analysis	32.88%
CRM	26.85%
Benchmarking	18.90%
Risk management	15.62%
Balanced Scorecard	12.60%
Porter's model	12.05%
BCG matrix	11.23%
VRIO analysis	3.84%

Next, the paper focused on finding dependencies in the use of strategic management tools and techniques from the point of view of company characteristics such as company size (H1a), capital structure (H1b), length of time on the market (H1c), and profitability (H1d). Moreover, the strategic management tools and techniques were also viewed from the perspective of the most represented orientation of strategic goal (market orientation) and the perspective of sustainable development orientation. An overview of significant dependencies is summarized in Table 6. Regarding company size, significant differences were observed in applying customer satisfaction, benchmarking, risk management, and Porter's model. In the strategic management framework, large companies mainly use these tools. A significant de-

**Table 6.** Dependencies in the use of strategic management tools/techniques from the point of view of certain company characteristics

Characteristic	Analysis	Chi-Square Value	p-value
Size (small/medium-sized/large)	Customer satisfaction	12.76	0.002***
	Benchmarking	17.81	0.000***
	Risk management	13.60	0.001***
	Porter's model	6.84	0.033**
Capital structure (domestic/mixed/foreign)	SWOT analysis	6.67	0.036**
	Customer satisfaction	6.10	0.047**
Length of time on the market (<5 years/5-10 years/ >10 years)	Strategic cost analysis	8.63	0.013**
	Risk management	8.31	0.016**
	Strategic cost analysis	8.63	0.001***
Profitability (loss/profit)	Risk management	8.31	0.033**
	Porter's model	6.11	0.005***
	Customer satisfaction	4.09	0.043**
Strategic goal of market position (yes/no)	Benchmarking	4.77	0.029**
	BCG matrix	4.63	0.031**
	VRIO analysis	5.80	0.016**
	Risk management	4.31	0.038**
Strategic goal of sustainable development (yes/no)	Porter's model	5.29	0.022**
	BCG matrix	5.04	0.025**

Note: \*\* indicates significance level at 0.05 level, \*\*\* indicates significance level at 0.01 level.

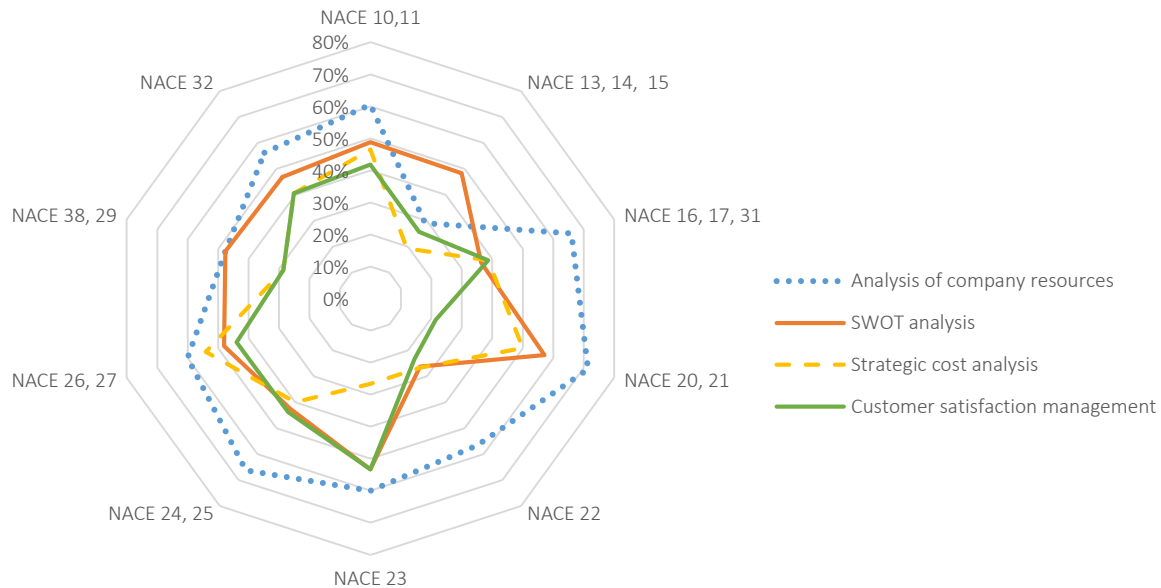
pendence was identified in applying SWOT analysis in companies with different capital structures. The SWOT analysis is part of the strategic management of large companies rather than small and medium-sized ones. In terms of profitability, strategic cost management, risk management, and Porter's model are applied to a greater extent by loss-making enterprises than profitable ones. A market position significantly affects the usage of customer satisfaction, benchmarking, BCG matrix, and VRIO analysis. The above analyses are typical for companies where the market position is an organic part of strategic goals. In terms of sustainability development, analysis as risk management, Porter's model, and VRIO analysis are used differently. The last tested dependence related to the time on the market and significant dependencies were observed in customer satisfaction, strategic cost management, and risk management. They are specific strategic tools for companies that have been operating on the market for up to five years or companies that have been operating for more than ten years.

Finally, strategic management tools/techniques within individual industries were analyzed. The results are presented graphically by a radar chart (Figure 1). The most common tool was the analysis of company resources, which was used by more than half of the surveyed manufacturing companies (from 56%

to 66%) in all industries, except for NACE 13, 14, 15 (manufacture of textiles, manufacture of wearing apparel and leather and related products) and NACE 28, 29 (manufacture of machinery and equipment and motor vehicles, trailers, and semi-trailers). This was followed by a SWOT analysis with a share of 47% to 57% of the surveyed companies in all sectors except NACE 16, 17, 18 (manufacture of wood and products of wood and cork, paper products and chemicals and chemical products) and NACE 22 (manufacture of rubber and plastic products). In the industrial sector of NACE 10, 11 (manufacture of food and beverages) and NACE 20, 21 (manufacture of chemicals and chemical products and basic pharmaceutical products), a strategic cost analysis was also performed more often (47% and 50% of the surveyed companies). For industry NACE 23 (manufacture of other non-metallic mineral products) and NACE 24, 25 (manufacture of basic metals and fabricated metal products), customer satisfaction was also represented (53% and 44% of companies).

## 4. DISCUSSION

From the point of view of strategy formulation activities, the research results point to the fact that Slovak manufacturing companies focus mainly on setting strategic goals and least on proposals



Note: NACE 10 Manufacture of food; NACE 11 Manufacture of beverages; NACE 13 Manufacture of textiles; NACE 14 Manufacture of wearing apparel; NACE 15 Manufacture of leather and related products; NACE 16 Manufacture of wood and of products of wood and cork; NACE 17 Manufacture of paper products; NACE 20 Manufacture of chemicals and chemical products; NACE 21 Manufacture of basic pharmaceutical products; NACE 22 Manufacture of rubber and plastic products; NACE 23 Manufacture of other non-metallic mineral products; NACE 24 Manufacture of basic metals; NACE 25 Manufacture of fabricated metal products; NACE 26 Manufacture of computer, electronic and optical products; NACE 27 Manufacture of electronic equipment; NACE 28 Manufacture of machinery and equipment; NACE 29 Manufacture of motor vehicles, trailers, and semi-trailers; NACE 31 Manufacture of furniture; NACE 32 Other manufacturing.

**Figure 1.** The most frequent strategic tools/techniques by industry

of strategy and mission statement creation. This corresponds to the results of Gavrić et al. (2019) and partially Svatošová (2019). Since companies underestimate mentioned activities, the potential of strategy formulation activities is not filled. This situation can be perceived as a weakness in the strategic management of businesses. This may be due to ignorance of the positive impact of strategic planning on business performance, as some studies report (Rizan et al., 2019; Afonina, 2015), or a lack of managers' knowledge. It may be related to the perception of strategic management, while a comprehensive and systematic view of strategic management in companies is missing. Companies use strategic management (activities and tools) randomly (without specifying the need to solve strategic problems). On the other hand, a positive sign may be that most companies focus on setting strategic goals. This part is generally considered the core of strategic planning.

Companies state the need for planning and knowledge of the changing environment and future trends as the reason for the realization of strategy formulation activities, which also cor-

responds to the percentage of companies using external analyses (34%). The companies may make little use of these analyses (companies are more focused on internal analyses). Afonina and Chalupský (2012) report similar results of applying tools in enterprises in the Czech Republic. The results further indicate a significant inconsistency with the results of Gallo and Tomčíková (2019), where BSC is the most used tool.

On the contrary, the results are consistent with Rajnoha and Lorincová (2015) and Lesáková and Dubcová (2016). In the case of the BSC tool, its lower use is more natural, as it is mainly used by larger companies in the subject research to a lesser extent than other enterprises. Although the tool is more typical for larger businesses, it can benefit all enterprises, regardless of size, when adapted to specific business conditions. The agreement in the tools with the given research is in the SWOT tool. SWOT is generally considered a relatively simple and universal tool for external and internal environment assessment, which is also reflected in the results of the companies. The Slovak manufactur-

ing companies use an average of three tools, consistent with Europe's results (Rigby et al., 2023).

The future direction of tool usage should include more tools from the external environment. At the same time, the given tools should be supplemented with newer tools ensuring flexibility and adaptation to dynamically changing conditions (in the form of scenarios or dynamic planning). The problem remains that the Slovak companies still have difficulties applying more

“traditional” tools. It would be worthwhile to increase information about the given tools, but especially the interest in obtaining this information on the part of the companies themselves. Another direction for the future is a questionable greater orientation toward sustainable development. However, companies are still oriented relatively “classically,” and few (only 22%) are also oriented toward sustainability. The future will probably be more and more inclined toward this trend.

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## CONCLUSION

The purpose of this paper was to evaluate the strategy formulation activities and the strategic management tools and techniques used by the Slovak manufacturing companies. Using statistical tools revealed answers to research questions about the strategy formulation process, strategic goals, and strategic management tools. Based on the results, it is possible to identify the weak points in the following areas:

- 1) the potential of strategy formulation activities is not completely filled (the Slovak companies only perform certain activities of strategy formulation);
- 2) the strategic goals of companies are still not focused on sustainable development (there is a lack of awareness, and even if there is awareness, there is no inclusion in strategic activities and company management);
- 3) there is a lack of a more comprehensive view of strategic goals, which would be achieved precisely using the balanced scorecard tool (it could also cover the field of sustainability in addition to other perspectives concerning sustainable development).

On the other hand, several positive areas in the researched topic are also evident. Slovak companies set strategic goals, precisely the center of gravity of strategic planning. At the same time, it is a good sign that for a few companies, only survival is a strategic goal.

There are many options for strategic management tools and techniques and possible views on them. The most used strategic management tools and techniques were analysis of company resources, SWOT analysis, and customer satisfaction (the orientation mainly toward resource-based view approach). Small companies could implement into their practice more tools that are not so time and resource intensive (e.g., SWOT or benchmarking). Larger companies, on the other hand, could focus more comprehensively on the balanced scorecard. Furthermore, given the current times, companies should think and develop new ways of working to adapt as the future and uncertainty unfold.

The paper has some limitations. One is an analysis of a relatively smaller number of tools and techniques (possible extension of tools and including new and contemporary tools in the form of dynamic planning, scenario, and so on). Another limitation is an orientation only on manufacturing companies. Future studies should expand the examined sample by the area of service companies and companies from other countries. Furthermore, it would also be useful to include tools with a more detailed description of the application of adequate tools for different types of businesses.

## AUTHOR CONTRIBUTIONS

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