**Journal of Business Sectors**
Volume 02 Issue 01 June 2024
ISSN 2989-3445 www.jobsjournal.eu

# KPIs and BSC in the SME segment. Myth or reality?

**Peter Gallo**
The Institute of Technology and Business in České Budějovice, Czech Republic
gallo@mail.vstecb.cz
0000-0001-5193-1997

**Jaroslav Kollman**
The Institute of Technology and Business in České Budějovice, Czech Republic
kollmann@mail.vstecb.cz
0000-0003-4110-145X

**Juliana Pavlinska**
Faculty of Arts, University of Presov, Slovak Republic
juliana.pavlinska@smail.unipo.sk

**Jan Dobrovic**
College of International Business ISM Slovakia in Prešov, Slovak Republic
jan.dobrovic1@gmail.com
0000-0002-0637-106X

## ABSTRACT

**Research background:** Companies are under considerable pressure to continuously improve their performance in today's highly competitive business world. KPIs have evolved as indispensable tool for assessing and measuring the performance of businesses against strategic objectives. Purpose of the article: The aim of this study is to present the current use of Balanced Scorecard systems and related KPIs in the implementation of the strategic management system in industrial companies in the SMEs segment and introduce a system of proposals for improving their performance, value, and competitiveness in the long term.

**Methods:** The research methodology in the first phase was based on an examination of the available scientific and professional sources in this area. Used sources were selected taking into account the time range of the data up to a maximum of 7 years and in relation to the chosen research topic and objective. The main techniques used were survey and comparative analysis. The research was conducted using a questionnaire from years 2017 to 2022. Using database of the Entrepreneur's Index portal (www.indexpodnikatela.sk), we obtained contact information of 4230 enterprises. From this sample, 290 enterprises showed an active interest and participated in the survey, representing 6.9% of the total sample of 4230 enterprises. The obtained data were analyzed and transformed into a logical form of tabular outputs.

**Findings & Value added:** Based on the research results, we can conclude that companies with more than 20 employees use strategic management systems and have linked KPIs. We also tested and proved the hypothesis of using supporting complementary management systems significantly more often by these companies. However, our research supports our hypothesis that companies that do not use BSCs do not have statistically significantly lower economic ROE. We also did not confirm that the turnover was lower in firms that did not use BSCs. On the other hand our research has shown that better strategic management systems must be built, as there is a lack of consistency between the objectives and essential performance indicators in all aspects of the balanced scorecard.

**RECEIVED:** 2023 October 23 ⦿ **ACCEPTED:** 2023 December 13 ⦿ **PUBLISHED ONLINE:** June 30

**KEYWORDS:** small and medium-sized enterprises, Key Performance Indicators, Balanced Scorecard

**JEL CLASSIFICATION:** L26, L29, M21

**CITATION:** Gallo, P., Kollman, J., Pavlinska, J. & Dobrovic, J. (2024). KPIs and BSC in the SME segment. Myth or reality? *Journal of Business Sectors, 2 (1),* 1–10. https://doi.org/10.62222/YTKL9850

## INTRODUCTION

Companies are under considerable pressure to continuously improve their performance in today's highly competitive business world. Key Performance Indicators (KPIs) have evolved as indispensable tool for assessing and measuring the performance of businesses against strategic objectives. Lee & Hong (2019) found that KPIs have become increasingly important in providing meaningful and reliable data to firms for decision-making, performance evaluation and strategy planning. To meet growing societal demand for responsible businesses, companies must develop a KPI system that aligns with their strategic goals, initiatives, and reward systems. According to Stoyanova-Bozhkova & Garnevskaya (2018), using appropriate KPIs can improve overall business performance, leading to increased profitability, customer satisfaction, and employee productivity.

However, many organisations still struggle to define and implement strategic KPIs that align with their objectives. This research is focused on the use of KPIs in companies and the evaluation of their KPI system coherence. The study also determines which strategic KPIs are currently being used and which ones should be adopted by organisations.

The COVID-19 pandemic has highlighted the need for a consistent KPI system that links strategic objectives, initiatives, and reward systems. According to Liu et al. (2020), the pandemic has significantly disrupted the operations of businesses and highlighted the need for agile management and decision-making. Appropriate KPIs enable firms to quickly adapt to changing conditions and make well-informed decisions to mitigate their impact.

In conclusion, organisations face an increased societal demand for accountable practices and responsive management; therefore, implementing effective KPIs is essential to their success. Lee & Hong (2019) found that KPIs are increasingly important in providing meaningful and reliable data to firms for decision-making, performance evaluation, and strategy planning. According to Stoyanova-Bozhkova & Garnevskaya (2018), using appropriate KPIs can improve the overall business performance, leading to increased profitability, customer satisfaction, and employee productivity. In this context, the need for solutions to improve business performance and adapt to the rapidly changing business environment is vital. This study aims to provide insights into the current use of KPIs in companies and identify which KPIs should be implemented to improve their management processes.

The originality of this article is as follows. There is an urgent need for solutions to improve business performance and adapt to a rapidly changing business environment. The purpose of this study is to shed light on the current use of KPIs in enterprises and to identify the KPIs that should be used to improve their management processes. In addition to examining the consistency of KPI systems among enterprises, this study provides recommendations for developing a comprehensive KPI framework. The paper extends the theoretical knowledge in this area of using KPIs and helps firms improve their performance and adapt to the rapidly changing business environment.

The structure of the article is as follows. In the first part, we present the studies of important researches in this field. In the second part, the aim of the research, the used methodology and data are presented. In the next chapter, the research results and short discussion of these results are presented. In the final part, the basic scientific conclusions of this research are defined.

## THEORETICAL BACKGROUND

KPIs are management tools that can monitor a process or activity, control it, and ensure that it achieves the set goal (Setiawan & Purba, 2020). This performance indicator is beneficial, especially to improve the company's performance and meet the set strategic goals (Bishop, 2018). Due to its quantitative nature, it shows a company's performance (Anggredewi et al., 2019). KPIs are used to measure performance and success in specific business areas such as finance, marketing, sales, and human resources. According to Kowal (2019), KPIs can be used in the energy sector or to evaluate construction performance (Mahmoud, 2020). Each company uses KPIs differently depending on the specific business goals and objectives that are set, an example of which is based on the SMART concept (Ishak et al., 2019). Varisco et al. (2018) state that based on KPIs, a company can measure past and future performance, strengthen strategies and provide data to compare how the company is performing. When a company implements KPIs, many benefits arise. Some of these benefits include higher productivity levels, rewarding employee performance, more efficient use of the company's technological equipment, increased labour productivity and last but not least, more accurate production planning (Žižek et al., 2020). Okudan et al. (2022) state that the most important external KPIs include monitoring market conditions, acquiring new customers, managers' competence, and company stability. All of these KPIs are central to the company and can help the company expand and, of course, remain competitive.

Benchmarking is the process by which a company compares its performance, processes, or products with those of direct competitors, or may take inspiration from them. According to An et al. (2021), benchmarking is a process in which units' performance can be compared to determine their position and set a quality standard. The history of Benchmarking goes back to ancient history and has a very long tradition. Based on the study by Melnik et al. (2020), Xerox was one of the first companies to engage in benchmarking, as it faced major economic problems in the 1970s due to Japanese competition. Currently, with the proliferation of faster computing systems and big data, there is no one-size-fits-all approach or benchmarking model that can answer all the questions and solutions of researchers (Ivanov et al., 2020). According to Roeder et al. (2020), with the advent of computers and scientific advances, processes and products have become benchmarked against competitors. Benchmarking aims to improve performance, processes, and products; compare with other standards in the industry; and design an approach to solve problems (Gogodze, 2019). According to Bărbută-Misu et al. (2019), many performance-evaluation benchmarking models exist. Most of these are based on financial indicators. Among the well-known benchmarking models is the Dominanta model (www.dominanta.sk), developed by comparing companies within EU countries. It is based on two dimensions: the financial perspective and development prediction. In the process of innovation, it has been transformed into an internet form and can be found on the website www.indexpodnikatela.sk.

The strategy often focuses on a long-term plan to help achieve a competitive advantage and meet set objectives. This strategy needs to be appropriately developed to avoid mistakes in its implementation (Khalifa, 2021). This fact is also confirmed by So & Kim (2019), who argue that a correctly set business strategy affects the performance of a business and its associated competitiveness. Business units have greater market and financial performance when strategic and financial controls are balanced (Seifzadeh & Rowe, 2019). According to Zapletalova (2023), the EFQM model is crucial to strategic planning and business success. It is essential to set a strategy both when the business is doing well and, especially, in times of crisis. However, there are no general principles; it depends on experience, intuition and so-called soft skills (Shayb & Musetescu, 2020). According to Gur et al. (2021), data is a necessary driving force nowadays, as data is easy to trace. Setting the right strategy for a company to achieve its goals is therefore crucial. This is also confirmed by Ding (2023), who states that working with "big data" is essential for improving management quality and performance throughout an entire organisation. According to Saranya & Anithaashri (2020), KPIs are key to business estimation and, together with corporate strategy, are considered important aspects for achieving company success. This fact is also confirmed by Olvera et al. (2021), who argue that the set strategy and long-term KPIs help evaluate performance and align it with set goals. In the case of strategy setting and strategic management, a deeper analysis of KPIs and the ability to integrate them into the business process is needed (Hristov et al., 2022). Companies are currently deploying green practices and sustainability strategies, which are paying off positively (Ullah et al., 2022). Hasan et al. (2019) argue that green strategies and entrepreneurship are essential, and green companies also significantly impact the performance of new businesses (Zhang et al., 2022).

The Balanced Scorecard is a modern strategic management tool that allows a company to evaluate how effective it is in all the activities that the company engages in (Sizova et al., 2020) and provides a complete overview of the institution with possible measures for improvement (Patricio, 2019). Using this tool, companies' operational performance can be evaluated and measured (Tuan, 2020). In the case of performance measurement, modified perspectives can be used, which can include the learning and growth of the organisation, finance, internal processes, and customers (Mamabolo & Myres, 2020). According to Fabrac (2022), there is a large percentage of digital transformation project failures, and a customised version of the Balanced Scorecard can be an excellent guide for ensuring the overall success of projects and reducing the percentage of digital transformation project failures. Based on the strategic scorecard, it is possible to improve critical areas; define operational indicators, goals, and objectives precisely and clearly within strategic management; and adapt to a dynamic environment (Olszanska & Prokopiuk, 2021). According to Larsson et al. (2021), implementing the Balanced Scorecard helps organisational units monitor company assets and better define strategies so that performance indicators are as good as possible. In addition, Zaini et al. (2022) state that SMEs need compliant management systems that define the correct strategy and priorities to achieve corporate goals, increase labour productivity, and reduce waste. These systems include, in particular, Balanced Scorecard and Lean Manufacturing, based on which KPIs targets can be identified, scrutinised, and evaluated, and measures can be implemented to eliminate them in case of error.

The difference between strategic and operational KPIs depends on the time horizon over which the objectives are met. Strategic KPIs focus on meeting a company's long-term goals and supporting the later stages of the innovation process (Gilsing et al., 2021). In comparison, operational KPIs focus on meeting the daily operational objectives (Cristea & Cristea, 2021). Strategic KPIs include, for example, return on invested capital, which shows the strengths and weaknesses of the company and provides valuable starting points for improving the company's functionality (Beyer & Hinke, 2020). Other strategic KPIs include the customer satisfaction indicator, which private and public entities use to identify weaknesses, and implement measures to improve them (Vochin et al., 2020). According to Tolstykh et al. (2020), business opportunities have also arisen with the advent of digital technology. Based on the economic value added, companies can control how they are doing, generate additional revenue sources from their growth, and gain additional business opportunities in the long term. Many strategic KPIs tools and methods exist; however, there is no standard framework for measuring performance. One of the widely used strategic KPIs is overall market share, as every business is trying to build a competitive advantage to beat its competitors. Therefore, in the long run, a business must set its strategic goals accurately and clearly to be more popular with customers than competitors and gain a good market position (Razika et al., 2019). According to Frost & Gustafsson (2018), productivity and cost efficiency are the most important operational KPIs in a business. Tactical KPIs can be used to evaluate an organisation's success, making it easier to detect deviations and determine whether tactical goals and strategies are correctly set and implementable (Perez-Alvarez et al., 2018). At the same time, it is necessary to set target values accurately so that the achievement of goals is as efficient as possible at all levels of KPIs (Mata et al., 2021).

The relationship between the organisation and the individual is a significant topic, as every company needs human resources and people need jobs. If a business wants to grow and prosper in the market environment, it must attract and ideally retain talented employees for as long as possible (Gallo, 2021). Related to this idea is the recruitment and selection of employees, whereby qualified employees of the business are responsible for selecting suitable candidates for the job so that the employees are beneficial to the company and mutual satisfaction works in the long run (Stachova et al., 2021). According to Yuan et al. (2023), employees of a company play a crucial role, especially in generating profits; therefore, the company needs to focus on training its employees. Training helps employees grow and transfer acquired theoretical knowledge to company practice. Although technology is constantly evolving, the value of human capital is the most valuable thing a company can possess. As employees do their work, they also need to be adequately motivated, with financial incentives, that is, salary increases or bonuses, being the most popular motivational tool according to Mach et al. (2022). However, these factors cannot work together if communication and feedback within the organisation are not functioning. When employees are communicated with, they have more trust in the organisation, are more creative, and last but not least, internal workplace relationships are also strengthened, which can bring many benefits to the company in the future (Lee & Kim, 2021).

## RESEARCH OBJECTIVE, METHODOLOGY AND DATA

The aim of this study is to present the current use of Balanced Scorecard systems and related KPIs in the implementation of the strategic management system in industrial companies in the SMEs segment, and introduce a system of proposals for improving their performance, value, and competitiveness and in the long term.

For this reason, they need to define measurable KPIs, based on which corrective actions can be taken in a timely manner. The primary research objective is divided into sub-objectives, based on which we synthesised the research results and recommendations for corporate governance. Based on the chosen research topic and main objective, we set the following sub-objectives: to examine the status of using the Balanced Scorecard method in enterprises and to analyse the use KPIs and their connection to modern strategic management systems.

The research methodology in the first phase was based on an examination of the available scientific and professional sources in this area. The sources used were selected with regard to the timeliness of the data up to a maximum of 7 years and in relation to the chosen research topic and objective. The main techniques used were survey and comparative analysis. After considering the information gathered and its relevance to the research objective, it was compared with the knowledge gained in practice based on research. The research was conducted using a questionnaire from 2017 to 2022. Through the Entrepreneur's Index portal (www.indexpodnikatela.sk), we obtained contact information of 4230 enterprises, which were contacted successively through mass emails. We selected companies using random sampling. From this sample, 290 enterprises showed an active interest and participated in the survey, representing 6.9% of the total sample of 4230 enterprises. The source database was Entrepreneur's Index portal (www.indexpodnikatela), where data was available in the required form and subsequently supplemented by a questionnaire survey. The obtained data were analyzed and transformed into a logical whole suitable for use and processing in the form of tabular outputs and graphs.

To meet the research objective based on the chosen research topic, the following scientific hypotheses were formulated:

- **Hypothesis H1:** The companies with more than 19 employees use the strategic management system significantly more than companies with up to 19 employees.
- **Hypothesis H2:** The companies that use the Balanced Scorecard strategic management system also use several complementary management systems.
- **Hypothesis H3:** The companies that do not use the Balanced Scorecard strategic management system have a lower return on equity KPIs than those that use the Balanced Scorecard.
- **Hypothesis H4:** The companies that use the Balanced Scorecard strategic management system have lower employee turnover than companies that do not use the Balanced Scorecard.

Scientific hypotheses we tested using a correlation analysis of the data under study. We used the Kolmogorov-Smirnov normality test, chi-square test, and non-parametric Mann-Whitney U test for statistical analysis. To test the normality, we used the Kolmogorov-Smirnov normality test to observe the significance value. If < was 0.05, it would mean that the distribution is abnormal, and we would use alternative, non-parametric tests. Since the variables did not reach a normal distribution in either test, we tested the hypotheses using non-parametric tests.

## RESULTS AND DISCUSSION

The study sample comprised 290 enterprises. Of these, 75.5% employed fewer than 19 employees, whereas 24.5% employed 20-250 employees. The structure of respondents: business owners being the most frequent respondents (55%), followed by senior managers (26%), and middle management (15%).

According the results of this empirical research, companies with over 20 employees use some strategic management system (SMS). First, as mentioned earlier, we tested the normality of the sample in table 1. Based on the normality test, appropriate instruments were used to test the hypotheses. Since we created a hypothesis investigating whether companies with more than 20 employees use more frequent strategic management systems (SSR), we divided the companies into two groups: companies with up to 19 employees and companies with 20 or more employees. Based on the calculations showed in table 2 and table 3, we accept hypothesis H1, and the alternative hypothesis is rejected. Enterprises with

Table 1: Test of ROE normality and employee turnover in firms using strategic management systems

| Indicator | | Kolmogorov-Smirnov Statistic | df | Sig. |
|---|---|---|---|---|
| ROE | Company uses SSR | 0,473 | 59 | 0 |
| Fluctuation | Company uses SSR | 0,287 | 59 | 0 |
| ROE | Company does not use SSR | 0,462 | 157 | 0 |
| Fluctuation | Company does not use SSR | 0,331 | 157 | 0 |

Source: own processing

Table 2: Distribution of companies by size and use of strategic management systems (CSS)

| Number of employees | The company does not use SSR | The company uses SSR | Total |
|---|---|---|---|
| up to 20 | 163 | 56 | 219 |
| 20 and more | 38 | 33 | 71 |
| Total | 201 | 89 | 290 |

Source: own processing

Table 3: Testing Hypothesis H1

| CHi - quadratic test | | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | | 11,019 | 1 | 0,001 |
| Continuity Correction | | 10,058 | 1 | 0,002 |
| Likelihood Ratio | | 10,539 | 1 | 0,001 |
| Linear-by-Linear Association | | 10,981 | 1 | 0,001 |
| N of Valid Cases | | 290 | | |
| **Cramer's V and Phi method** | | | **Value** | **Approx. Sig.** |
| Nominal by Nominal | Phi | | 0,195 | 0,001 |
| | Cramer's V | | 0,195 | 0,001 |
| N of Valid Cases | | | 290 | |

Source: own processing

Table 4: Use of Strategic Management Systems (SMS) and Complex Management Systems (CMS)

| Use of SSR/KMS | The company does not use no supporting KMS | The company uses supporting KMS | Total |
|---|---|---|---|
| The company does not use SSR | 157 | 44 | 201 |
| The company uses SSR | 11 | 78 | 89 |
| Total | 168 | 122 | 290 |

Source: own processing

Table 5: Testing Hypothesis H2

| CHi - quadratic test | | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | | 109,422 | 1 | 0,000 |
| Continuity Correction | | 106,741 | 1 | 0,000 |
| Likelihood Ratio | | 116,862 | 1 | 0,000 |
| Linear-by-Linear Association | | 109,045 | 1 | 0,000 |
| N of Valid Cases | | 290 | | |
| **Cramer's V and Phi method** | | | **Value** | **Approx. Sig.** |
| Nominal by Nominal | Phi | | 0,614 | 0,000 |
| | Cramer's V | | 0,614 | 0,000 |
| N of Valid Cases | | | 290 | |

Source: own processing

more than 19 employees use the strategic management system significantly more than those with up to 20 employees. The conclusions of this hypothesis suggest that businesses with fewer employees may have difficulty planning for the future, and consideration should be given to which strategic management systems and to what extent it is appropriate for these businesses to use the

Balanced Scorecard method of performance management, as well as what KPIs to focus on.

**Hypothesis H1 was confirmed.**

The research set concerning was divided the use of strategic management systems (SSR) according to whether the companies have seen any type of this system. Based on the questionnaire results, we found that over 57% of the surveyed enterprises did not use complementary management systems. If companies indicated that they did not use or understand any SSR or other unspecified strategic management tools, we assigned them to a group that does not use these systems. Companies which indicated using SSR form the second group. Companies were similarly divided into groups based on whether they use KMS.

We conclude that our hypothesis is confirmed based on the calculations, described in tables 4 and 5. Enterprises using SSR strategic management systems also make statistically significant use of complementary management support systems (CMS). Based on the confirmation of the hypothesis, complementary management systems can be considered together with strategic management systems and used in the implementation, which is confirmed by our findings directly in practice, in cooperation with companies. Therefore, it is necessary to focus on modern strategic management systems with complex KPI structures. For their presentation, modern management tools in a digitised form in the form of dashboards are suitable.

**Hypothesis H2 was confirmed.**

The average ROE was -98%, while the median is 13.3%. This difference was due to outliers in the data. Some companies had negative ROEs, which skewed the overall average, whereas others had highly positive ROEs. Therefore, we decided to use a non-parametric U-test that did not consider the average. The data shows that most companies have ROEs that range from 0% to 10%. By analysing the survey responses, we found that the average ROE is higher in companies that use the Balanced Scorecard than in those that do not. In the case of the median, the opposite is true.

Table 6: Return on equity in non-BSC companies

| Mann-Whitney Ranks | N | Mean Rank |
|---|---|---|
| The company does not use BSC | 215 | 115,43 |
| The company uses BSC | 14 | 108,36 |
| Total | 229 | |
| **Mann-Whitney test** | **ROE** | |
| Mann-Whitney U | 1412,000 | |
| Wilcoxon W | 1517,000 | |
| Z | -0,387 | |
| Asymp. Sig. (2-taild) | 0,699 | |

Source: own processing

The non-parametric Mann-Whitney U-test confirmed no statistically significant difference between the groups compared, as the calculated value of 0.699 exceeded the observed value of a = 0.05. As the ROE data did not have a normal distribution, we used the non-parametric Mann-Whitney U-test for two independent samples to test the validity of the hypothesis. Based on these calculations, we conclude that this hypothesis is disproven. Businesses that do not use the Balanced Scorecard do not have a statistically significantly lower ROE. When testing this hypothesis based on our research and practical experience, it is essential to consider whether the ROE indicator is sufficiently more predictive than the KPIs under study. In EU countries, return on assets (ROA) appears to be a much more important indicator, also called the company's productive power, which can play a more important role in crisis situations of strategic economic development.

**Hypothesis H3 was not confirmed.**

Based on this research, we found that the average turnover rate in companies using strategic management systems (SSR) is higher than that in those that do not.

Table 7: M-W Ranks fluctuations

| Mann-Whitney Ranks | N | Mean Rank |
|---|---|---|
| The company does not use BSC | 262 | 139,7 |
| The company uses BSC | 21 | 170,64 |
| Total | 283 | |
| **Mann-Whitney test** | **Fluctuation** | |
| Mann-Whitney U | 2149,5 | |
| Wilcoxon W | 36603,5 | |
| Z | -1,838 | |
| Asymp. Sig. (2-taild) | 0,066 | |

Source: own processing

Statistical investigation revealed that the data on variable employee turnover did not have a normal distribution. We used the non-parametric Mann-Whitney U-test for two independent samples to test the validity of the hypothesis. The result (0.066) exceeds the specified value a = 0.05. Based on the test, because the hypothesis was not confirmed, we rejected it and accepted the alternative hypothesis. Companies that use the Balanced Scorecard do not have significantly lower employee turnover than companies that do not use the Balanced Scorecard. Our research included a turnover indicator because key performance indicators must be balanced between financial and non-financial indicators. This KPI is also important because it belongs to the fourth perspective of growth and learning potential, which can be significantly influenced by the development of companies towards a learning organisation.

**Hypothesis H4 was not confirmed.**

When examining whether the enterprises had a long-term plan for more than three years, we found that as many as 54% of the respondents answered affirmatively and another 10% considered implementing one. 36% of enterprises had no long-term plan in place.

When examining what metrics companies track, we found that up to 69%, which totals 199 companies, strive to achieve a long-term goal by tracking customer satisfaction. The second most common KPI was sales (51%). 45% of the companies in the research sample used employee satisfaction as a KPI.

Hypothesis 1, that companies with 20 and more employees use a management system, correlates with the research results, where we found that 75.5% of the companies were companies with up to 20 employees. We then investigated whether companies that use a strategic management system also use other complementary management systems. The research found that 58% of the businesses did not use any KMS. Other companies have reported the use of various combinations of management support and similar systems.

Our research found that 43% of businesses considered long-term goal setting to be somewhat or very important. When examining KPIs and customer satisfaction, 85% of the executives said that customer satisfaction is vital to the business. 56% of executives said that business process innovation was essential, 33% were unable to give an opinion, and the remaining 12% did not consider process innovation to be very important. 32% of the responses rated this issue as impactful on performance. Regarding training, we found that 65% of businesses considered further training of employees to be very or somewhat important.

When analysing whether managers in the surveyed companies think that long-term goal setting somehow affects company performance, we found that 60% of the companies assumed that goal setting affects company performance to some extent. In companies with a strategic management system, 70% said they thought it was very important, 25% did not make a clear decision, and only 5% did not consider goal-setting important before or at all. The view that customer satisfaction had a fair or significant impact on business performance was held by 85% of the managers. In the survey, 59% of respondents said that customer satisfaction strongly influenced business performance.

From the survey on the importance of training and education in companies, we found that 74% of companies believed that employee training fairly impacted performance, 20% did not express a clear opinion, and the remaining 7% believed that training had no impact on performance.

In terms of turnover, we found that 23% of companies reported turnover rates between 0-10% during the reporting period. In the case of enterprises that used the BSC system in their management, it could be noted that turnover ranged from 0 to 40%, with 50% of these enterprises having a turnover between 5% and 10%. In terms of performance measurement, 90% of companies using BSC had a performance measurement system. In 58% of cases, enterprises that did not use any BSC had no measurement system.

Regarding the duration of BSC implementation, companies using BSC reported that implementation took less than half a year (35.5%), one year (29%), or more than a year (35.5%). Out of these, 18% sought the help of an external consultant, and only one company used a turnkey solution to develop and implement the system (3%).

Comparing our results with the studies presented in the first section, our findings are in line with those preferred by e.g. Ding (2023), who considers setting the right strategy for a company to achieve its goals as crucial. He also states in his research that working with "big data" was essential to improving the quality and performance of management throughout the organization.

The research also confirmed the research of Saranya & Anithaashri (2020), who state that KPIs were key to proper business estimation and along with corporate strategy were considered important aspects to achieve the success of the company.

## CONCLUSION

The aim of this study was to present the current use of Balanced Scorecard systems and related KPIs in the implementation of the strategic management system in industrial companies in the SMEs segment and introduce a system of proposals for improving their performance, value, and competitiveness in the long term.

Based on the research results, we can conclude that companies with more than 20 employees use strategic management systems and have linked KPIs. We also tested and proved the hypothesis that they use supporting complementary management systems significantly more often. However, our research supports our hypothesis that companies that do not use BSCs do not have statistically significantly lower economic ROE. We also did not confirm that the turnover was lower in firms that did not use BSCs. On the other hand our research has shown that better strategic management systems must be built, as there is a lack of consistency between the objectives and essential performance indicators in all aspects of the balanced scorecard.

The research clearly concludes that in today's crisis-filled times, it is essential to move towards the implementation of strategic management systems. Therefore, we propose the following course of action for companies that do not have strategic management systems:

- Analyse the possibility of introducing a Balanced Scorecard strategic management system and implementing the system in cooperation with external consulting firm or company that already has experience in doing so.
- Develop a 5-year vision for the company and draw up a BSC strategy map.
- Based on the strategic map, implement a system of strategic objectives and their metrics in the range of 15-25 KPIs, which enables fulfilment of the enterprise's vision for the period under review of four per-

spectives: financial, customer, process, and learning growth.

Growth learning is gradually becoming an important innovation practice as it moves the company towards a learning organisation, which, with the advent of artificial intelligence, is becoming a necessity.



## REFERENCES


1. An, Q., Tao, X., & Xiong, B. (2021). Benchmarking with data envelopment analysis: An agency perspective. *Omega 101*: 102235.
2. Anggradewi, Puspitasari; Aurelia; Sardjananto, Sri; Ekawati, Ardhianiswari Diah. Calitatea. (2019). Improving Quality in Service Management through Critical Key Performance Indicators in Maintenance Process: A Systematic Literature Review. *Quality-Access to Succes,* 20(173), 72-79.
3. Bărbută-Misu, N., Madaleno, M., & Ilie, V. (2019). Analysis of risk factors affecting firms' financial performance-Support for managerial decision-making. *Sustainability* 11. https://doi.org/10.3390/su11184838
4. Beyer, D., & Hinke, J. (2020). European benchmarking of determinants of profitability for companies with accrual accounting in the agricultural sector. *Agricultural Economics*, 66(11), 477-488. https://doi.org/10.17221/128/2020-AGRICECON
5. Bishop, D. A. (2018). Key Performance Indicators: Ideation to Creation. *IEEE Engineering Management Review,* 46(1), 13-15. https://doi.org/10.1109/EMR.2018.2810104
6. Coculova, J., & Tomcikova, L. (2021). Innovative Human Resource Management Practices for the Talent Management Implementation. *Marketing and Management of Innovations*, 4, 47-54. https://doi.org/10.21272/mmi.2021.4-04
7. Cristea, C., & Cristea, M. (2021). KPIs for Operational Performance Assessment in Flexible Packaging Industry. *Sustainability,* 13(6). https://doi.org/10.3390/su13063498
8. Ding, W. H. (2023). Enterprise Performance Management Optimization Based on Big Data. Springer International Publishing, 260, 3-10. ISSN 2190-3018.
9. Fabrac, R. (2022). Digital Balanced Scorecard System as a Supporting Strategy for Digital Transformation. *Sustainability,* 14(15). https://doi.org/10.3390/su14159690
10. Frost, C., & Gustafsson, M. S. (2018). Operational management through key performance Indicators: A case study performed at the warehouses at Fresenius Kabi. Master Programme in Industrial Management and Innovation. Uppsala University, 1-69.
11. Gallo, P. (2022). *Ľudské zdroje v kontexte sociálnej práce.* Vydavateľstvo Prešovskej univerzity. ISBN 978-80-555-2966-0.
12. Gilsing, R., Wilbik, A., Grefen, P., Turetken, O., Ozkan, B., Adali, O.E., & Berkers, F. (2021). Defining business model key performance indicators using intentional linguistic summaries. *Softw Syst Model,* 20, 965-996. https://doi.org/10.1007/s10270-021-00894-x
13. Gogodze, J. (2019). Benchmarking of Problems and Solvers: a Game-Theoretic Approach. *Foundations of Computing and Decision Sciences,* 44(2), 137-150. https://doi.org/10.2478/fcds-2019-0008
14. Gur, I., Spiekermann, M., Arbter, M., & Otto, B. (2021). Data Strategy Development: A Taxonomy for Data Strategy Tools and Methodologies in the Economy. *Innovation Through Informations Systems*, 46, 448-461. https://doi.org/10.1007/978-3-030-86790-4_30
15. Hasan, M. M., Nekmahmud, M., Yajuan, L., & Patwary, M. A., (2019). Green business value chain: a systematic review. *Sustainable Production and Consumption,* 20, 326-339. https://doi.org/10.1016/j.spc.2019.08.003
16. Horváthová, J., Mokrišová, M., & Vráblíková, M. (2021). Benchmarking: A Way of Finding Risk Factors in Business Performance. *J. Risk Financial Manag.* 14(5). https://doi.org/10.3390/jrfm14050221
17. Hristov, I., Appolloni, A., & Chirico, A. (2022). The adoption of the key performance indicators to integrate sustainability in the business strategy: A novel five-dimensional framework. *Business Strategy and the Environment*, 31(7), 3216-3230. https://doi.org/10.1002/bse.3072

18. Ishak, Z., Fong, S. L., & Shin, S. C. (2019). *SMART KPI Management System Framework.* Technology (ICSET). New York: IEEE, 172-177. ISSN 2470-640X.
19. Ivanov, T., Singhal, T., & Singhal, R. (2020). Tutorial on Benchmarking Big Data Analytics Systems. *ICPE´20. New York: Assoc Computing Machinery,* 50-53. https://doi.org/10.1145/3375555.3383121
20. Khalifa, A. S. (2021). Strategy, nonstrategy and no strategy. *Journal of Strategy and Management,* 14(1), 35-49. https://doi.org/10.1108/JSMA-04-2020-0092
21. Kim, S., & Joo, B. (2019). The effect of corporate social responsibility on firm performance: Evidence from Korea. *Sustainability,* 11(9), 2574. https://doi.org/10.3390/su11092574
22. Kovaľová, M., & Nogová, Z. (2016). Creative approach to the innovations based on the product benchmarking results. In Innovation Management, Entrepreneurship and Corporate Sustainability. *Paper presented at the 4th International Conference, Prague, Czechia, May 26-27.* Edited by Martin Lukeš, Jan Misař, Jan Mareš, Ondřej Dvouletý, Miroslav Špaček and Ivana Svobodová. Prague: Oeconomica, 338-48.
23. Kowal, B. (2019). Key performance indicators in a multi-dimensional performance card in the energy sector. IOP Conference Series: Earth and Environmental Science. Krakow: IOP Publishing, 214. https://doi.org/10.1088/1755-1315/214/1/012093
24. Larsson, D., Ratnayake, R. M. C., & Gildseth, A. (2021). Development of a Balanced Score Card for Knowledge Work in Project-oriented Engineering Organization: KPI Prioritization Using AHP. *IEEE IEEM21.* New York: IEEE, 488-493. ISSN 2157-3611.
25. Lee, S., & Hong, S. (2019). The influence of key performance indicators on firm performance: an empirical study of small and medium-sized enterprises in Korea. *Sustainability,* 11(8), 2307. https://doi.org/10.3390/su11082307
26. Lee, Y., & Kim, J. (2021). Cultivating employee creativity through strategic internal communication: The role of leadership, symmetry, and feedback seeking behaviors. *Public Relations Review*, 47(1). https://doi.org/10.1016/j.pubrev.2020.101998
27. Liu, C., Wei, X., Wang, C., Wang, X., Zhang, L., & Tang, X. (2020). Strategic and operational management of COVID-19 for business sustainability. *Journal of Cleaner Production*, 271, 122604. https://doi.org/10.1016/j.jclepro.2020.122604
28. Machova, R., Zsigmond, T., Zsigmondova, A., & Seben, Z. (2022). Employee Satisfaction and Motivation of Retail Store Employees. *Marketing and Management of Innovations*, 1, 67-83. https://doi.org/10.21272/mmi.2022.1-05
29. Mahmoud, A. S., Ahmad, M. H., Yatim, Y. M., & Dodo, Y. A. (2020). Key Performance Indicators (KPIs) to Promote Building Developers Safety Performance in the Construction Industry. *Journal of Industrial Engineering and Management,* 13(2), 371-401. https://doi.org/10.3926/jiem.3099
30. Mamabolo, A., & Myres, K. (2020). Performance Measurement in Emerging Market Social Enterprises using a Balanced Scorecard. *Journal of Social Entrepreneurship*, 11(1), 65-87. https://doi.org/10.1080/19420676.2018.1561499
31. Mata, H. D., Hadi, M., & Hale, D. (2021). Alignment and Identification of the Relationships between Key Performance Indicators in a Multilevel Tree Structure to Support Transportation Agency Decisions. *Transportation Research Record*, 2675(7), 555-567. https://doi.org/10.1177/03611981211019038
32. Melnik, T. E., Lomakin, D. E., Lebedeva, E. V., Aygumov, T. G., & Pakhomova, A. I. (2020). Applying benchmarking tool in assessment financial safety of organization. *Amazonia Investiga,* 9(27), 72-81. https://doi.org/10.34069/AI/2020.27.03.8
33. Okudan, O., Budayan, C., & Arayici, Y. (2022). Identification and Prioritization of Key Performance Indicators for the Construction Small and Medium Enterprises. *Teknik Dergi,* 33(5), 12635-12661. https://doi.org/10.18400/tekderg.977849
34. Olszanska, S., & Prokopiuk, I. (2021). Balanced Scorecard as an Effective Method for Process Management in a Transport Company. *Scientific Journal of Silesian University of Technology*, 111, 119-128. https://doi.org/10.20858/sjsutst.2021.111.10
35. Olvera, C., Piqué, J. M., Cortés, U., & Nemirovsky, M. (2021). Evaluating University-Business Collaboration at Science Parks: a Business Perspective. *Triple Helix*, 8(3), https://doi.org/10.1163/21971927-BJA10007
36. Patricio, A. A. (2019). The Balanced Scorecard Applied to the Strategic Planning of Private Banking. *Ciencia Unemi*, 12(29), 20-35. https://doi.org/10.29076/issn.2528-7737vol12iss29.2019pp20-35p
37. Perez-Alvarez, J. M., Maté, A., Gómez-López, M. T., & Trujillo, J. (2018). Tactical Business-Process-Decision Support based on KPIs Monitoring and Validation. *Computers in Industry*, 102, 23-39. https://doi.org/10.1016/j.compind.2018.08.001
38. Razika, M., Yang, Q., Yang, N., & Hafeez, M. (2019). An assessment of global product development performance indicators in China. *Proceedings of the 2019 International Conference on Industrial Engineering and Systems Management. New York: IEEE, 2019, 95-99.* https://www-webofscience-com.ezproxy.techlib.cz/wos/woscc/full-record/WOS:000537748200017
39. Roeder, M., Sherif, M. A., Saleem, M., Conrads, F., & Ngomo, A. N. (2020). Benchmarking the Lifecycle of Knowledge Graphs. Knowledge Graphs for Explainable Artificial Intelligence: Foundations, Applications and Challenges. Berlin: Akademische Verlagsgesellsch Aka, 2020, 47, 73-97. ISSN 1868-1158.

40. Saranya, M., & Anithaashri, T. P. (2020). Novel approach to enhance network security using key performance indicator in business analytics. *4th International Conference on Design. Bristol: IOP Publishing, 992.* ISSN 1757-8981.
41. Seifzadeh, P., & Rowe, W. G. (2019). The role of corporate controls and business-level strategy in business unit performance. *Journal of Strategy and Management*, 12(3), 364-381. https://doi.org/10.1108/JSMA-10-2018-0114
42. Setiwan, I., & Purba, H. H. (2020). A Systematic Literature Review of Key Performance Indicators (KPIs) Implementation. *Journal of Industrial Engineering & Management Research*, 1(3). https://doi.org/10.7777/jiemar.v1i2
43. Shayb, H., & Musetescu, R. (2020). Business Strategy during Crisis. *Proceedings of the International Conference on Business Excellence.* Warsaw: Sciendo, 14(1), 263-272. ISSN 2502-0226.
44. Sizova, D. A., Sizova, T. V., & Adulova, E. S. (2020). A Balanced Scorecard in the Company Management Strategy in Contemporary Conditions. *Industry Competitiveness* 115, 269-278. https://doi.org/10.1007/978-3-030-40749-0_32
45. So, W. H., & Kim, H. K. (2019). Effect: Business Environment Factors on Business Strategy and Business Performance. *Advanced Multimedia and Ubiquitous Engineering* 518, 445-453. https://doi.org/10.1007/978-981-13-1328-8_58
46. Stachova, K., Stacho, Z., Cagáňová, D., & Baroková A. (2021). Progress in the use of tools for the selection of employees at the time of digitizing. *EAI Endorsed Transaction on Scalable Information Systems*. Ghent: Inst Computer Sciences, 8(33). https://doi.org/10.4108/eai.25-8-2021.170757
47. Stoyanova-Bozhkova, S., & Garnevska, E. (2018). Key Performance Indicators for Successful Business Performance. *Journal of Economic Development, Environment and People*, 7(4), 44-54. https://doi.org/10.26458/jedep.v7i4.61
48. Tolstykh, T. O., Shmeleva, N., Fomenko, N., Lenort, R., & Wozniak, M. (2020). The Approaches to Managing of Industrial Enterprises on The Ecosystems and Digitalization Principles. *Education Excellence and Innovation Management. Norristown: Int Business Information Management Assoc-Ibima, 4914-4925.* https://www-webofscience-com.ezproxy.techlib.cz/wos/woscc/full-record/WOS:000661127405027
49. Tuan, T. T. (2020). The Impact of Balanced Scorecard on Performance: The Case of Vietnamese Commercial Banks. *Journal of Asian Finance Economics and Business*, 7(1), 71-79. ISSN 2288-4637. https://doi.org/10.13106/jafeb.2020.vol7.no1.71
50. Ullah, R., Ahmad, H., Rizwan, S., & Khattak, M. (2022). Financial resource and green business strategy: the mediating role of competitive business strategy. *Journal of Sustainable Finance & Investment*. https://doi.org/10.1080/20430795.2022.2031850
51. Varisco, M., Johnsson, Ch., Mejvik, J., Schiraldi, M. M., & Zhu, L. (2018). KPIs for Manufacturing Operations Management: driving the ISO22400 standard towards practical applicability. IFAC-PapersOnLine, 51(11), 7-12. https://doi.org/10.1016/j.ifacol.2018.08.226
52. Vochin, O. A., Sârbu, M. A., Stanciu, S., & Mansour, J. (2020). Implementing Net Promoter Score in the Public Sector Organizations. *2020 Basiq International Conference. Bucuresti:* Editura Ase, 532-539. ISSN 2457-483X.
53. Yuan, Z. Z., Wang, Z. Y. A., & Liu, B. (2023). Employee education level and real earnings management: evidence from China. *Asia-Pacific Journal of Accounting & Economics*. https://doi.org/10.1080/16081625.2023.2176327
54. Zaini, F. F., Salleh, M. R. B., Rahman, N. A., & Rahman, A. A. (2022). Lean - Balanced Scorecard Integration Framework for Small Medium Enterprises. *Industrial Engineering and Management Systems*, 21(2), 277-290. https://doi.org/10.7232/iems.2022.21.2.277
55. Zapletalova, S. (2023). The business excellence models and business strategy. *Total Quality Management & Business Excellence*, 34(1-2), 131-147. https://doi.org/10.1080/14783363.2022.2033615
56. Zhang, X. E., Meng, Q., & Le, Y. (2022). How Do New Ventures Implementing Green Innovation Strategy Achieve Performance Growth? *Sustainability*, 14(4). https://doi.org/10.3390/su14042299
57. Žižek, S. Š. (2020). Key Performance Indicators and Industry 4.0: A Socially Responsible Perspective. *Naše gospodarstvo/Our Economy,* 66(3), 22-35. https://doi.org/10.2478/ngoe-2020-0015