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CONTROLLING IN WOODWORKING AND FURNITURE MANUFACTURING ENTERPRISES: DOES PERFORMANCE INFLUENCE ITS ESSENCE AND APPLICATION?

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ABSTRACT

Controlling represents an essential tool for performance management and planning in industrial enterprises, particularly in the woodworking and furniture manufacturing sectors, which play a significant role in the Slovak economy. The aim of this study was to examine whether the extent of controlling tool usage (measured by the Return on Sales indicator) is affected by company performance influences, and whether the capital structure of companies relates to the complexity of their controlling reports. The research was conducted with a sample of 405 manufacturing companies in Slovakia, using a standardized questionnaire and structured interviews to examine the link between controlling practices and enterprise performance in this sector. The analysis included Pearson's chi-square goodness-of-fit test, which was also part of the frequency analysis. The results confirmed statistically significant differences in the extent of controlling tool usage across sectors. Although hypothesis H1 concerning the relationship between performance and the scope of controlling was not statistically significant, the observed trend may not be entirely random, and its potential relevance could emerge with a larger research sample. Hypothesis H2 was confirmed: companies with foreign or mixed capital showed higher complexity in their controlling reports. The findings have practical implications for managers when deciding whether to expand their control tools. The study also lays the groundwork for further research into the connection between performance and controlling practices.

Keywords: controlling, controlling tools, controlling report; performance, Return on Sales, woodworking industry, furniture manufacturing.

INTRODUCTION

In the context of rapidly evolving markets and increasing competitive pressure, all enterprises face growing demands for adaptability, cost efficiency, and strategic decision-making. This trend also affects woodworking and furniture manufacturing enterprises, which have a long-standing tradition in the Slovak business environment and use a unique, domestically available renewable raw material. These enterprises must respond flexibly not only to fluctuations in input material prices and labor costs but also to changing customer expectations and sustainability requirements. In this environment, controlling emerges as a key managerial concept that supports the coordination of planning, monitoring, and performance evaluation (Eschenbach, 2004; Horvath, 2009; Reichmann, 2012; Kotapski, 2022).

Despite its growing importance, the concept of controlling is often misunderstood or narrowly interpreted, especially in practice, where it is sometimes confused with simple monitoring or cost supervision. This ambiguity may stem from the linguistic origin of the word "to control," yet controlling as a managerial function encompasses a much broader strategic role. Historically, its development in Europe was influenced by post-war economic restructuring, particularly in German-speaking countries, where it was adapted from American business practice. Over time, controlling evolved into an independent managerial discipline, with significant differences between the American financial-accounting approach and the German cost-oriented perspective (Guenther, 2013; Pavlovska and Kuzmina-Merlino, 2013). While control focuses on reactive monitoring of standards, controlling emphasizes proactive planning and strategic direction. Robbins and Coulter (2018) define it as a process of monitoring, comparing, and correcting performance, while Tworek and Sałamacha (2019) highlight its role as a management-support tool.

In the context of the outlined theoretical framework, it is appropriate to examine the specifics of controlling application in the woodworking and furniture manufacturing industry, which holds a distinctive position within the Slovak business environment. In the woodworking and furniture industry, controlling can be applied across various areas from cost management and investment planning to quality assurance and workforce optimization (Behúnová *et al.*, 2022; Dobrovič *et al.*, 2019; Agarwal and Chaudhry, 2022). However, the scope and depth of its application vary significantly among enterprises, influenced by internal factors such as organizational structure, capital composition, and performance orientation. The academic literature has yet to offer a clear classification framework linking controlling practices to enterprise performance in this sector. For example, the study by Sedliačiková *et al.* (2024) examined the use of various control tools in family and non-family businesses within the woodworking and furniture industry but did not specifically analyze their performance using financial indicators.

In Europe, particularly in our regional context, the German approach to developing and applying controlling is more commonly adopted. Founders and proponents of the German model (Horvath, 2006; Eschenbach, 2004) describe controlling as a goal-oriented enterprise management system supported by secondary coordination, integrating planning, control, and information subsystems. Contemporary authors increasingly perceive controlling as qualified decision-making support (Schöning and Mendel, 2023; Behúnová *et al.*, 2022; Kotapski, 2022), emphasizing its strategic and integrative function. Previous research has examined controlling tools across various industries. In logistics, strategic tools such as cost analysis and the Balanced Scorecard are emphasized (Reta et al., 2018). SWOT, GAP, and portfolio analyses are commonly used in manufacturing and commercial enterprises (Benzaghta *et al.*, 2021), while Mazaraki and Fomina (2016) prefer tools based on managerial functions. Štefko *et al.* (2019) studied operational controlling in the tourism sector, where break-even analysis and bottleneck identification dominate. Lositska *et al.* (2022) highlight the use of benchmarking and profitability matrices in commercial enterprises. The diversity of tools reflects the complexity of controlling, influenced by investor know-how, managerial expertise, sector specialization, enterprise size, and especially the philosophy behind the application. According to Weber and Schäffer (2019), controlling has significantly advanced in recent decades, delivering measurable benefits in efficiency and competitiveness (Bienkowska, 2020). Research on the use of controlling tools in industrial enterprises is presented in studies by Potkany *et al.* (2022, 2024). Controlling reports play a key role in management and controlling itself, as they transform historical data into predictive information. They should include Key Performance Indicators (Gallo *et al.*, 2024) and follow a plan–actual–deviation structure, with advanced versions incorporating

flexible planning. Deviations, defined as the difference between expected and actual outcomes, are central to evaluating enterprise performance (Fazal, 2022; Swapnil and Asma, 2019). Despite the importance of the topic, the literature only marginally addresses the impact of controlling complexity on enterprise performance. Some studies point to the significance of financial controlling for efficiency (Kozarevic and Vehabovic, 2020; Khudyakova *et al.*, 2019), but broader empirical evidence is lacking (Vuko and Ojvan, 2013).

The aim of this study is to examine whether statistically significant differences exist in the scope of controlling tools used among industrial enterprises operating in different sectors in Slovakia. Additionally, the study investigates whether the performance level of woodworking and furniture manufacturing enterprises, measured by the Return on Sales (ROS) indicator, serves as a classification factor for the practical application and complexity of controlling. The research specifically focuses on two dimensions: (1) the relationship between the range of controlling tools used and enterprise profitability, and (2) the link between capital structure and the sophistication of controlling reports.

The study contributes to a deeper understanding of the role of controlling in enhancing decision-making quality and flexibility, as well as operational efficiency within this sector. At the same time, it seeks to systematically address a research gap, as the existing literature has not yet provided a comprehensive framework connecting enterprise performance with the practical use of controlling. This lack of a classification framework represents a challenge for empirical investigation of the link between enterprise performance and the practical application of controlling, which is also one of the main objectives of this study. The innovative aspect of the study lies in combining a quantitative approach to performance measurement with a qualitative analysis of controlling practices, creating space for new insights into managerial behavior in the woodworking and furniture manufacturing sector. Furthermore, the study lays the groundwork for future research and comparative analyses in the field of controlling, performance, and organizational design in industrial enterprises. The article is structured as follows: it begins with a review of relevant literature, followed by a methodological section outlining the research design, statistical procedures, and the formulation of the research question and hypotheses. The results are analyzed and discussed, and the final section provides a summary and recommendations for future research.

MATERIALS AND METHODS

The research was conducted among manufacturing enterprises operating in the Slovak Republic, with a specific focus on the woodworking and furniture manufacturing industry. The selection of companies was purposeful, taking into account their technological advancement and competitive environment, which creates favorable conditions for the application of controlling tools. Particular attention was given to enterprises classified under NACE codes 16 (Manufacture of wood) and 31 (Manufacture of furniture), which represent the core of the study.

Data collection took place from April to June 2025 through a standardized electronic questionnaire, supplemented by structured telephone interviews with representatives of selected companies. This combined approach helped increase the response rate while deepening the understanding of qualitative aspects of controlling practices.

The research included small, medium, and large enterprises with more than 10 employees, located within the territory of the Slovak Republic. Company size categorization was based on the European Commission Recommendation No. 2003/361/EC (2003), while

industry classification followed NACE codes, Section C – Manufacturing. The target population was identified using data from the Statistical Office of the Slovak Republic, resulting in 3,585 manufacturing enterprises meeting the selection criteria.

To calculate the minimum sample size with a maximum allowable error of 5%, the Taro Yamane method was used, which is suitable for research involving a finite population (Chanuan *et al.*, 2021). The calculation is based on the following formula (1):

$$n = \frac{N}{1+N \cdot E^2} \quad (1)$$

Where: n = required minimum sample size N = population size (3,585 enterprises),
e = specified acceptable margin of error (0.05).

Based on the quantification of variables and the application of formula (1), the minimum required sample size was determined to be 360 enterprises. A total of 405 enterprises participated in the research, which represents a sufficiently large sample given the size of the target population.

To assess the representativeness of the research sample, the chi-square goodness-of-fit test was applied. This test is used to verify whether the distribution of empirical frequencies in the sample differs statistically significantly from the distribution in the population. The chi-square test statistic was applied according to Labudová *et al.* (2021), using formula (2):

$$\chi^2 = \sum \frac{(f_0 - f_e)^2}{f_e} \quad (2)$$

Where: f_0 = observed frequency,
f_e = expected frequency.

The chi-square test statistic was also applied to examine the investigated dependencies within the framework of contingency analysis, providing an informational basis for testing the stated hypotheses and addressing the defined research question. A commonly accepted 5% significance level was used as the decision rule in hypothesis testing. All calculations were performed using the statistical software STATISTICA 14, and tabular and graphical outputs were edited in Microsoft Excel 365.

Company performance was measured using the Return on Sales (ROS) indicator, which represents a traditional, easily identifiable, and comparable financial metric across industries. ROS expresses business efficiency in relation to revenue and is particularly suitable for manufacturing enterprises, where the ratio between net profit and sales revenue is monitored. The formula for calculating ROS is as follows (Hayes, 2023):

$$ROS = (Net\ Profit / Revenue) \times 100 \quad (3)$$

Based on the defined objective of the study and the current state of knowledge, the following research question (RQ1) and research hypotheses (H1–H2) were formulated:

RQ: Are there statistically significant differences in the scope of controlling tools used among industrial enterprises operating in different sectors in Slovakia?

H1: It is assumed that woodworking and furniture manufacturing enterprises that apply a broader range of controlling tools achieve higher performance, measured by the Return on Sales (ROS) indicator.

H2: It is assumed that woodworking and furniture manufacturing enterprises with different capital structures exhibit statistically significant differences in the complexity of controlling reports.

RESULTS AND DISCUSSION

The issue of controlling, particularly in relation to company performance and the complexity of its application, has not yet been sufficiently explored, at the international level or within the Slovak business environment. This study, therefore, addresses an identified research gap and provides empirical insights from manufacturing enterprises, with a focus on the wood processing and furniture production sectors.

The analysis was based on a final dataset comprising a comprehensive information database of responses from 405 manufacturing companies, meeting the minimum sample size requirement at a maximum allowable error of 5%. The representativeness of the research sample was verified using Pearson's chi-square goodness-of-fit test, based on a sectoral classification according to the SK NACE system. The test results confirmed (p level = 0.199) that the distribution of companies in the sample does not differ statistically significantly from the distribution across the entire sectoral population, allowing the research sample to be considered representative (Table 1). The percentage representation of individual sectors is shown in the column "Observed (Oi)."

A similar approach was used to verify the sample's representativeness across company size categories. The research sample included 265 small, 108 medium-sized, and 32 large enterprises, of which 27 operated in the Manufacture of Wood sector and 20 in the Manufacture of Furniture sector. The test results (p level = 0.630) again confirmed that the distribution of companies by size in the sample corresponds to the distribution in the population, without statistically significant deviations (Table 2). These findings provide a methodological basis for further analysis of the relationship between company performance and the application of controlling tools.

Tab.1 Results of the representativeness test according to NACE classification.

Manufacturing sector	$\chi 2 = 19.34$ sv = 15 p = 0.199		
	Observed (Oi)	Expected (Ei)	(E-O)2 (/O)
Other manufacturing NACE 32	10	8	0.500
Manufacture of furniture NACE 31	20	13	3.769
Manufacture of motor vehicles NACE 29	20	21	0.048
Manufacture of motor vehicles NACE 28	32	35	0.2570
Manufacture of electrical equipment NACE 27	17	21	0.762
Manufacture of computer products NACE 26	14	11	0.819
Manufacture of fabricated and metal NACE 24+25	102	97	0.258
Manufacture of other non-metallic mineral products NACE 23	17	19	0.211
Manufacture of rubber products NACE 22	26	31	0.806
Manufacture of basic pharmaceutical products NACE 21	6	2	8.000
Manufacture of chemicals NACE 20	11	8	1.125
Manufacture of paper and paper products NACE 17	9	7	0.571
Manufacture of wood NACE 16	27	31	0.516
Manufacture of leather and related products NACE 15	7	5	0.800
Manufacture of textiles and wearing apparel NACE 13+14	19	22	0.409
Manufacture of food products and beverages NACE 10+11	68	74	0.486
Total	405	405	19.337

Tab. 2 Results of the representativeness test by enterprise size.

Enterprise Size	$\chi 2 = 0.91$ sv =2 p = 0.630		
	Observed (Oi)	Expected (Ei)	(E-O)2 (/O)
Large	32	30	0.134
Medium	108	101	0.486
Small	265	274	0.296
Total	405	405	0.915

Research Question 1 (RQ1) sought to determine whether statistically significant differences exist in the extent of controlling tool use among industrial enterprises operating across various sectors in Slovakia.

For analysis, the collected data were adjusted to enable classification of companies by the extent of their use of controlling approaches and tools. In this study, companies with a broader scope of implementation are defined as those applying at least two or more tools from the provided list: planning and variance analysis (plan vs. actual), cost consumption monitoring, quality and production volume control, product pricing, benchmarking, budgeting, and others. Companies using only one or none of these tools were classified into the lower-level controlling application category, that is, a narrower range of controlling approaches and tools.

Figure 1 visualizes the intensity of controlling tool usage using quartile box plots by sector, classified according to the NACE code.

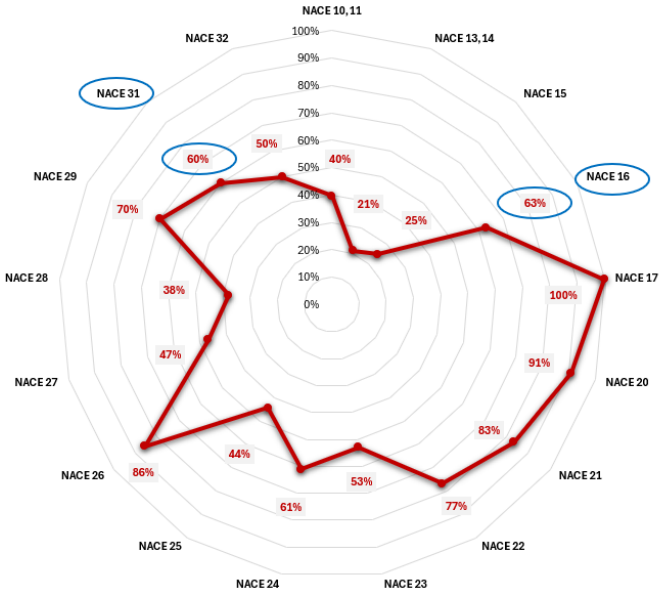

Fig. 1 Use of wider scale of controlling tools in industrial sectors classified by NACE code.

The highest proportion of companies was recorded in sector NACE 17 – Manufacture of paper and paper products, where 100% of enterprises reported using a broader range of controlling tools and approaches, such as planning and variance analysis (plan vs. actual), cost consumption monitoring, quality and production volume control, product pricing, benchmarking, and budgeting. These companies apply foreign know-how in their management practices, supported by a relatively precise system of reporting and budgeting. A similarly high proportion of broader controlling tool usage was observed in sector NACE 20 – Manufacture of chemicals (91%).

Sectors such as NACE 26 – Manufacture of computer products, NACE 21 – Manufacture of basic pharmaceutical products, and especially NACE 29 – Manufacture of

motor vehicles, which constitutes a dominant part of Slovakia's GDP, also showed noteworthy results. In this sector, the extent of controlling application was above average, reaching 70%. In the wood-processing industry sectors NACE 16 and NACE 31, the share of companies using at least two or more controlling tools (as specified in the methodological section above) was approximately 60%. Compared to previous research (Potkany *et al.*, 2022), this represents a certain degree of progress, which is a positive signal for the future.

In terms of implications, it can be assumed that these wood-processing sectors are likely to experience an increased level of technological modernization in the coming years, including the implementation of robotic systems, the digitalization of production processes, and the expansion of management information systems. This development will likely be accompanied by a growing need for the application of advanced controlling tools, which will be essential to support decision-making, planning, and effective management in a dynamically changing competitive environment.

In most other sectors, more than 50% of companies were also observed to use a broader range of controlling tools, defined in the methodological section as the application of at least two or more tools from the provided list. In contrast, sectors with a lower proportion of companies applying a wider range of controlling tools included NACE 13+14 – Manufacture of textiles and apparel, with 21% of companies, and NACE 15 – Manufacture of leather and related products, with 25%. This situation may be influenced by a lower degree of automation, a higher share of manual labor, smaller company size, limited investment capacity, lower regulatory burden, and limited know-how in the area of controlling.

Based on the results from the research sample, the significance of the observed differences between industrial sectors was tested in relation to the entire population of Slovak manufacturing companies. Table 3 presents the results of the contingency analysis. Based on the p-value ($p = 0.003$) corresponding to the calculated chi-square test statistic, it can be concluded that there are statistically significant differences between industrial sectors in Slovakia regarding the use of a broader range of controlling approaches and tools. The degree of dependence, expressed by the contingency coefficient, reached a value of 0.35, which can be interpreted as a moderate strength of relationship.

Tab. 3 Results of the Chi-square test of significant differences in the use of controlling tools and aproaches across individual industrial sectors.

Chi-square test	Degree of freedom	p-level	Contingency coefficient
56.13	16	0.000	0.35

The level of automation and informatization, higher investment capacity in information systems, and increased requirements for output standardization create favorable conditions for the systematic implementation of controlling tools and approaches. These tools serve not only to monitor costs and performance but also to support strategic decision-making, planning, and process optimization. In such sectors, controlling functions as an integrated management system that is essential for maintaining competitiveness and ensuring effective operations in a dynamic business environment.

Supporting evidence for these claims can be found in the results of several independent studies, such as Poniščiaková *et al.* (2017), Kuzmynchuk *et al.* (2024), and Polyakova *et al.* (2023).

In the context of Hypothesis H1, it was assumed that woodworking and furniture manufacturing enterprises applying a broader range of controlling tools would achieve higher performance, measured by the Return on Sales (ROS) indicator. The research

underlying this hypothesis was presented in studies by several authors (Horváthová and Mokrišová, 2017; Isibor *et al.*, 2022).

The relationship between the level of controlling tool implementation and company performance is illustrated by the bar chart in Figure 2. The performance of each enterprise was quantified using a ROS scale ranging from 0 to 1. Based on the graphical interpretation of the observed data, a quasi-positive trend was identified: 50% of companies with negative ROS values applied a broader range of controlling tools, followed by 58% and 71% of companies with increasing ROS levels (up to 1.5% and up to 5%), and reaching 100% in the group of companies with ROS values above 5%.

From these findings, manufacturing enterprises with higher performance also showed a higher proportion of companies applying a broader range of controlling approaches and methods. Similar conclusions were reported by Sedliačiková *et al.* (2022) in a study focused on family businesses in the wood and furniture industries, which confirmed a positive relationship between the extent of controlling tool usage and company performance. Bazimya and Erorita (2024) also reached similar conclusions, analyzing the financial performance of manufacturing enterprises and stating that effective use of controlling leads to higher ROS. Likewise, Susanty *et al.* (2023) developed a simulation model for the furniture sector in Indonesia, which confirmed that controlling and sound decision-making enhance performance and sustainability during the pandemic.

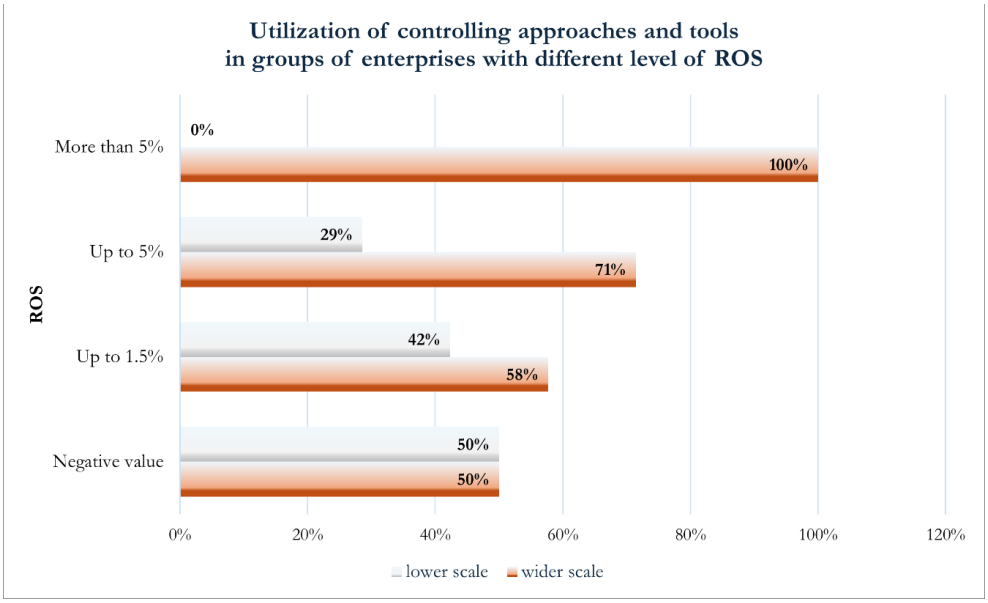

Fig. 2 Use of controlling tools and approaches in wood and furniture manufacturing enterprises of with different level of ROS.

The observed trend was subsequently subjected to a statistical significance test. However, the statistical significance of the observed differences was not confirmed by the test results. The calculated p-value of p = 0.318 exceeds the defined 5% significance level of the test (Table 4). This conclusion can be attributed to the insufficient size of the empirical sample, as the hypothesis focused only on companies from two industrial sectors: NACE 31 – Manufacture of furniture and NACE 16 – Manufacture of wood and products of wood and cork, which led to a reduction in the amount of data included in the analysis.

It is therefore reasonable to assume that expanding the research sample to include additional industrial sectors and increasing the number of analyzed companies could enhance the statistical robustness of the results and potentially confirm the validity of Hypothesis H1.

Including companies with varying levels of technological advancement, investment capacity, and managerial know-how would also allow for better identification of structural factors that influence the effectiveness of controlling tool application in practice.

Tab. 4 Results of the Chi-square test of significant differences in the implementation of controlling tools and approaches across groups of manufacturing enterprises with different level of ROS.

Chi-square test	Degree of freedom	p-level	Contingency coefficient
3.52	3	0.318	0.26

In the context of Hypothesis H2, it was assumed that companies in the woodworking and furniture manufacturing sectors with different capital structures exhibit statistically significant differences in the complexity of their controlling reports. The complexity of these reports was defined based on a synthesis of expert sources (Rajnoha, 2002; Däumler and Grabe, 2002; Pavković *et al.*, 2022; Babaali, 2022), distinguishing three levels:

1. Basic structure – focused on retrospective analysis (e.g., plan vs. actual deviations)
2. Extended structure – includes a forward-looking dimension (forecasting)
3. Comprehensive structure – incorporates flexible budgeting and advanced analytical elements.

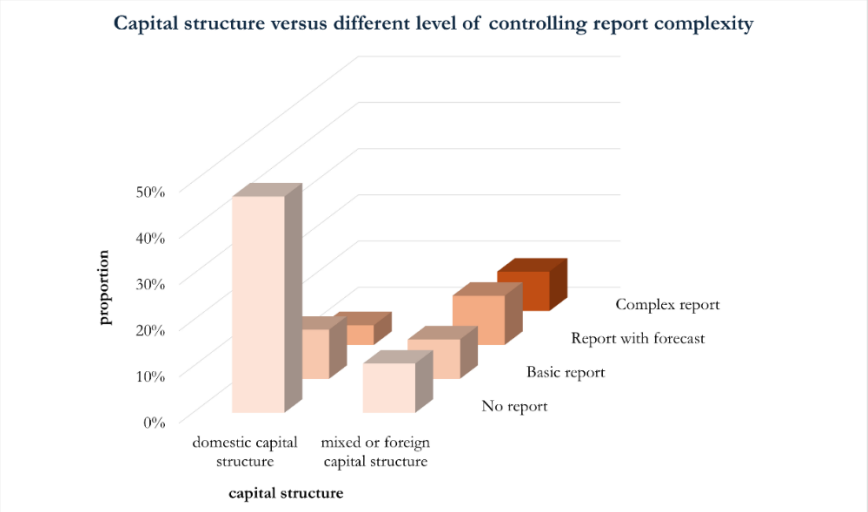

Fig. 3 Capital structure versus level of controlling report complexity in wood and furniture manufacturing enterprises.

For visualization purposes, Figure 3 also includes a fourth category, representing companies that do not use any controlling reports. The relationship between capital structure and the complexity of controlling reports in the research sample is illustrated in a 3D bar chart (Figure 3). The results of the chi-square test of dependence are presented in Table 5. The test confirmed statistically significant differences between groups of companies with different capital structures (p-value = 0.003; contingency coefficient = 0.48). The identified degree of dependence was evaluated as moderate.

Tab. 5 Results of the Chi-square test of dependence between capital structure and level of complexity report in wood and furniture manufacturing enterprises.

Chi-square test	Degree of freedom	p-level	Contingency coefficient
14.31	3	0.003	0.48

Based on the analysis of residual frequencies, it can be concluded that companies with mixed capital, especially those with a predominance of foreign capital, exhibit greater complexity in their controlling reports. These companies more frequently incorporate a future-oriented time dimension into their outputs, forecast monitored parameters, and transition to comprehensive structures with flexible budgeting. Hypothesis H2 was confirmed.

Rajnoha (2002) presented the basic and extended structures of controlling reports within the temporal dimensions of the past and the future, highlighting their relationship to company performance. In a similar context, Däumler and Grabe (2002) emphasized the importance of a comprehensive structure in controlling reports. Pavković *et al.* (2022) confirmed that high-quality reporting based on Enterprise Resource Planning principles directly influences company performance, as measured by ROS and ROA indicators.

An interesting finding was also reported by Jha and Kumar (2024), who examined the capital structure of Indian SMEs and found that financing type significantly affects ROA and ROE, which, in turn, impact controlling-related planning. Similar conclusions were drawn by Mansour *et al.* (2023), who analyzed companies in Jordan. The authors found that capital structure positively correlates with company performance, as measured by market share, with this relationship more pronounced in larger firms.

This connection suggests that a more robust capital base can support more sophisticated controlling planning and reporting, particularly in the context of strategic decision-making.

CONCLUSION

The results of the study confirm that the extent of controlling tool usage differs statistically significantly across industrial sectors in Slovakia. Sectors with a higher degree of automation, digitalization, and investment capacity demonstrate more systematic application of controlling approaches, highlighting their importance in strategic management and process optimization. Although the hypothesis regarding the relationship between company performance (ROS) and the extent of controlling was not statistically confirmed, the observed trend suggests a potential connection that warrants further investigation. The findings also indicate that company performance may influence not only the scope of controlling tool usage but also its strategic essence. Hypothesis H2 was confirmed, companies with foreign or mixed capital structures exhibited greater complexity in their controlling reports, including elements of forecasting and flexible budgeting. These companies more frequently incorporate a future-oriented time dimension into their outputs, apply advanced analytical tools, and transition to comprehensive reporting structures. Capital structure thus plays a significant role in shaping the depth and quality of controlling outputs.

Despite the robustness of the sample and the use of validated statistical methods, the study has certain limitations. The analysis focused exclusively on enterprises within two industrial sectors (NACE 16 and NACE 31), which may restrict the generalizability of the findings. Additionally, performance was measured using a single financial indicator (ROS), which, although suitable for manufacturing, does not capture broader dimensions such as operational efficiency or innovation capacity. Future research could benefit from incorporating additional performance metrics and expanding the sectoral scope to validate the observed trends. Expanding the research to include additional sectors with varying levels

of technological advancement, investment capacity, and managerial know-how could enhance statistical robustness and help identify structural factors that influence the effectiveness of controlling in practice.

The study contributes to a deeper understanding of the role of controlling in improving decision-making quality and flexibility, as well as operational efficiency in the woodworking and furniture manufacturing industries. It also systematically addresses a research gap, as the existing literature has not yet provided a comprehensive framework linking company performance with the practical use of controlling. The innovative aspect of the study lies in its combination of a quantitative approach to performance measurement with qualitative analysis of controlling practices, creating space for new insights into managerial behavior. The findings also lay the groundwork for future research and comparative analyses in the areas of controlling, performance, and organizational design of industrial enterprises. These insights may serve as a basis for managers when making decisions about investments in controlling systems and when structuring capital to enhance company performance.

Based on the findings, managers in woodworking and furniture manufacturing enterprises are encouraged to adopt a broader range of controlling tools, especially in areas such as cost monitoring, forecasting, and benchmarking. Enterprises with foreign or mixed capital structures may serve as examples of best practice in implementing more complex controlling reports. Investing in digital reporting systems and training in strategic controlling can enhance decision-making quality and improve overall performance. Managers should also consider aligning controlling practices with the specific needs of their organizational structure and market positioning

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