

THE USE OF CONTROLLING IN WOODWORKING AND FURNITURE FAMILY BUSINESSES: EVIDENCE FROM SLOVAKIA

Natália Poláková – Mariana Sedliačiková – Jarmila Schmidtová

ABSTRACT

The aim of the paper is to assess the use of controlling in family businesses within the woodworking and furniture industry in Slovakia compared to non-family businesses and to identify the underlying reasons for its implementation or lack thereof. The questionnaire-based survey was evaluated using relevant statistical methods. Based on the findings, it can be concluded that most of the woodworking and furniture enterprises belong to family businesses, and they tend to use controlling to a lesser extent compared to non-family businesses. The results indicated a positive correlation between the size of the enterprise and the implementation of controlling. Additionally, a distinctive specific of the surveyed businesses which may hinder the application of controlling is considered the concordance of ownership and management roles. The study identified the state of the use of controlling in the surveyed businesses and sheds light on the factors influencing their decisions.

Keywords: controlling; family businesses; non-family businesses; woodworking and furniture industry.

INTRODUCTION

Family businesses (FBs) represent a significant part of all business entities in the EU as well as in Slovakia. They are an essential part of the national economy and play an important role in the development of the social economy (Yuan, 2019). The share of FBs in Slovakia is estimated at 60 to 80% in all sectors. They produce 30 to 40% of GDP and provide 40% of employment (SBA, 2018). Despite their considerable importance, they face insufficient legislative support (SBA, 2020). A legislatively anchored definition of the term family business enabling targeted support for these businesses, has been established in Slovakia just recently by an amendment to Act No. 112/2018 Coll. on the Social Economy and Social Enterprises, becoming effective from July 2023 (MPSVR, 2022). According to the definition, a family business is characterized as a legal entity, a cooperative, and a sole trader under the condition that several members of the joint family have ties to the enterprise established by the law. Members of the joint family are considered to be spouses, relatives in the direct line, siblings, persons related to each other up to the 4th degree and their spouses. The relationship of the family members to the company must meet the following conditions:

- In the case of a legal entity:
 - at least two family members directly or indirectly hold the majority of voting rights, and at least one family member serves as a statutory body or is a member of the statutory body,

- at least two family members collectively receive more than 50% of the profit after tax from the business or
- one family member is the sole partner or shareholder while also serving as a statutory body or a member of the statutory body, and at least one other family member holds a position as a statutory body member, procurator, member of the supervisory board, or has an employment relationship with the company.
- In the case of a cooperative, either the first or second condition valid for legal entities must be met.
- For a sole trader, there is a condition, that at least one family member must be employed by the sole trader.
- In the event that an external investor enters a legal entity or a cooperative and their increased participation in the business at the expense of family members is justified by the protection of their investment, the investor's influence must be limited to a certain period (NRSR, 2022).

A family business can be defined as a complex system, which is characterized by its connection between family and business, where family, ownership and business overlap simultaneously (Ramadani and Hoy, 2015; Davis, 2019). From this relationship, the specifics of FBs emerge, which significantly distinguish them from non-family ones. The peculiarities of the business-family relationship mean that FBs are managed in a specific way and differently from non-family businesses (NFBs) (Herrera and De Las Heras-Rosas, 2020).

The history of FBs is primarily associated with traditional industries, including the wood-processing industry (WPI), uniformed by the woodworking and furniture industry and the paper and pulp industry. WPI in Slovakia represents a crucial area of industry and has the potential to become a pillar of the Slovak national economy (Sedliačiková *et al.*, 2016; Melichová *et al.*, 2022). It relates to a rich domestic raw material base of a sustainable nature, and its suitable geographical distribution (Hajdúchová *et al.*, 2016; Malá *et al.*, 2018). In addition, there is a potential from the point of view of ecological direction (Loučanová *et al.*, 2014; Olšiaková *et al.*, 2016). However, the reality is that WPI enterprises in Slovakia face specific problems and this negative status is reinforced by the long-term failure to solve them (Drábek and Merková, 2017). The shortcomings of the Slovak WPI are considered to be outdated and worn equipment that does not meet the requirements of modern technology and related lack of innovation, lack of support and development strategy and insufficient product finalization (Krišťáková *et al.*, 2021). Hajdúchová *et al.* (2016) state that one of the areas that WPI businesses should focus on, is the implementation of innovations and modern management methods, which include controlling too. Today, innovation is the main driving force for creating value and maintaining competitive advantage (Vitezić and Vitezić, 2015). Innovative management systems, including controlling, are increasingly coming to the foreground (Tamulevičienė and Subačienė, 2019).

In today's world of globalization and turbulently changing business environment, business management processes are becoming more and more complex, and the number of alternative decision-making options is increasing, as is the level of their complexity. To remain competitive, businesses must create and implement new management systems and apply innovative business management methods. One such system that helps to detect problems and solve them in an integrated way is controlling as an innovative management system (Tamulevičienė and Subačienė, 2019). Controlling can be defined as an effective management tool, the task of which is the coordination of planning, control, as well as providing an information base to achieve set business goals (Horvath, 2009). As Ahlrichs (2012) states, strategic as well as operational management of any kind needs a specific set

of management tools to achieve set business goals. The management cycle with clear goals, planning and measurement of achieved results and active management with countermeasures is a basic tool of corporate controlling (Vitezić and Vitezić, 2015). The application of controlling helps to improve the functionality of the company and the decision-making process, and at the same time increases its value. The implementation of such a system could be a decisive factor that will ensure the success of the company (Tamulevičienė, 2019; Sedlačiková *et al.*, 2021b).

A survey exploring the use of controlling in family businesses operating in the woodworking and furniture industry in Slovakia, which represents a unique combination of these three areas, has not been carried out yet. The aim of the paper is to assess the use of controlling in FBs within the woodworking and furniture industry in Slovakia compared to NFBs and to identify the underlying reasons for its implementation or lack thereof.

MATERIALS AND METHODS

The methodological procedure of the paper was divided into several logical phases. The first phase was focused on a literature review carried out by analysis of available secondary sources using the scientific methods of summarization, synthesis, comparison, analogy and deduction. Based on the published outputs on the issue of FBs, controlling, use of controlling in FBs and WPI with a focus on the woodworking and furniture industry (WWAFI), the following hypotheses were formulated:

H1: It is assumed that the majority of the Slovak woodworking and furniture enterprises belong to family businesses.

FBs represent the dominant and oldest form of businesses (Comi and Eppler, 2014; Ramadani and Hoy, 2015). Petlina and Koráb (2015) and Szymanska (2015) state that the share of FBs in the EU reaches approximately 85%. Hudáková *et al.* (2015) consider 70 to 90% of all businesses in Slovakia FBs. This is the first step important from the point of view of identifying Slovak FBs operating in the WWAFI.

H2: It is assumed that FBs operating in the WWAFI use controlling to a lesser extent compared to non-family businesses.

FBs seem to have less need to use controlling and its tools than NFBs (Hiebl, 2021). The phenomenon of the use of controlling in FBs was dealt with by several authors such as Helsen *et al.* (2017), Prencipe *et al.* (2014), Quinn *et al.* (2018), Senftlechner and Hiebl (2015). They point out that the use utilization of controlling in FBs significantly differs from that in NFBs and depends on factors that cannot be observed in NFBs.

H3: It is assumed that the rising trend of the use of controlling in FBs of WWAFI depends on the size of the enterprise.

Some studies suggest that the smaller need for the introduction of controlling in FBs appertains primarily micro and small FBs (Hiebl *et al.*, 2013; Speckbacher and Wentges, 2012).

H4: It is assumed that the main specific of FBs operating in the WWAFI hindering the use of controlling, is considered the concordance of ownership and management roles.

FBs are characterized by a frequent concordance of ownership and management roles in one or several individuals. It can be assumed that conflicts of interest and information asymmetry occur less frequently or are less severe in these businesses compared to NFBs (Hiebl, 2013a; Madison *et al.*, 2016; Quinn *et al.*, 2020; Hiebl *et al.*, 2019). Consequently, it can be inferred that control systems are less critical for these businesses since members of

FBs already act in the best interest of the company without specific encouragement or guidance (Mitter, 2014; Quinn *et al.*, 2018).

In the next phases, primary data were obtained through a questionnaire and subsequently analyzed. The second phase focused on developing a questionnaire based on the acquired theoretical knowledge. Subsequently, a pretest of the questionnaire was conducted with a sample of 30 respondents (Bačíková and Janovská 2018). The final form of the questionnaire consisted of 27 questions divided into two main sections. The first section was addressed to businesses operating in the WWAFI (both family and non-family) and the second section was determined for FBs only. The FBs were identified according to the definition set by law in Slovakia, as mentioned above. When a respondent, representing a company, confirmed the presence of any of the above-mentioned features of a family business, it was classified as a family business. Otherwise, it was considered a non-family business. The survey was carried out from December 2022 to June 2023 as the third phase. The electronic questionnaire placed on the Google forms domain was distributed to email contacts of the woodworking and furniture manufacturing enterprises. According to Finstat (2022), a total of 3573 enterprises operating in the WWAFI were active in the surveyed period. The research sample consisted of 2500 randomly selected woodworking and furniture manufacturing enterprises according to the SK NACE classification of economic activities (code C16 and C31). The achieved return rate of the questionnaire was 14.52% (Pacáková, 2009). The fourth phase focused on the processing of data obtained from the survey. To obtain summary outputs, data matrix was compiled in the Microsoft Excel program. The data were subsequently mathematically and statistically tested in the Statistica 12 program. The assumed hypotheses were tested using relevant statistical methods. The verification of the assumed hypotheses above was preceded by a check of the minimum sample size (n), which is a prerequisite for generalizing the obtained results to the entire population according to the following test characteristic (Faeron, 2017):

$$n = \frac{p(1-p)}{\frac{e^2}{z^2} + \frac{p(1-p)}{N}} \quad (1)$$

The representativeness of the research sample was verified through Pearson's Chi-square test of goodness of fit according to two characteristics of the basic set. These were affiliation in the category according to the SK NACE classification of economic activities and size of the enterprise. The test characteristic is as follows (Pacáková, 2009):

$$\chi^2 = \sum_{i=1}^k \frac{(X_i - Np_i)^2}{Np_i} \quad (2)$$

The verification of validity of the assumed hypotheses was carried out based on mathematic-statistical methods such as Test a hypothesis about a population proportion (one-tailed), Test a hypothesis about two population proportions (one tailed), Pearson's chi-square test and Interval estimate (two-tailed), all of them at the level of significance (α) of 5%, i.e., the above is claimed with the confidence of 95% (Pacáková, 2009).

The Test a hypothesis about a population proportion (one-tailed) is used to test a statistical hypothesis that the proportion of a certain value of a variable in the basic set is equal to a given constant according to the following relation (Ali and Bhaskar, 2016; Pacáková, 2009):

$$u = \frac{f - \varphi_0}{\sqrt{\frac{f(1-f)}{n}}} \quad (3)$$

The Test a hypothesis about two population proportions (one-tailed) is used to test a statistical theory claiming that the two distributions' parameters are the same in both basic sets. The test characteristic is as follows (Pacáková, 2009; Labudová *et al.*, 2021):

$$Z = \frac{P_1 - P_2}{\sqrt{\frac{P_1(1-P_1)}{n_1} + \frac{P_2(1-P_2)}{n_2}}} \quad (4)$$

Pearson's Chi-square test of independence is used to assess whether two categorical variables are independent of each other according to following relation (Pacáková, 2009):

$$\chi^2 = \sum_{i=1}^k \frac{(X_i - Np_i)^2}{Np_i} \quad (5)$$

The Interval estimate (two-tailed) provides a numerical range within which the estimated parameter is likely to fall with a certain level of probability in the given basic set. The test criterion is as follows (Pacáková, 2009; Ali and Bhaskar, 2016):

$$f - u_{\frac{\alpha}{2}} \sqrt{\frac{f(1-f)}{n}} < \varphi < f + u_{\frac{\alpha}{2}} \sqrt{\frac{f(1-f)}{n}} \quad (6)$$

The detailed results of the survey using descriptive statistics are described in the next part of the paper. They were compared and discussed with the previous findings and authors as the last phase.

RESULTS AND DISCUSSION

A total of 363 Slovak businesses operating in the WWAFI according to the SK NACE classification of economic activities (code C16 and C31) participated in the survey, 73.83% woodworking and 26.17% furniture manufacturing enterprises. Most businesses belong to micro enterprises (75.76%), followed by small enterprises (20.66%). 48.21% of the businesses perform at the national level and 41.60% at the international level. They mostly operate on the market for 6 – 15 years (33.06%) and for 16 – 25 years (28.93%). The minimum sample size under the conditions of an acceptable margin of error of 5% ($e=0.05$), confidence level of 95 % ($z=1.96$), with the known size of the basic set ($N=3573$) was set at 347 Slovak woodworking and furniture enterprises. As 363 of these businesses participated in the survey, the minimum sample size condition was met, and the results of the survey can be generalized to the entire population of enterprises operating in the WWAFI. The research sample met the condition of its representativeness according to the two observed characteristics (the affiliation in the category according to the SK NACE classification of economic activities $p=0.685$; the size of the enterprise $p=0.728$). The distribution of the enterprises in the research sample corresponds to the distribution of the population of woodworking and furniture enterprises in Slovakia and to the distribution of their size.

A total of 252 FBs operating within WWAFI participated in the survey. The findings show that their representation reaches up to 69.42% (Tab. 1). To statistically confirm the hypothesis H1 assuming that the majority of Slovak woodworking and furniture enterprises

belong to FBs, Test a hypothesis about a population proportion was conducted, yielding a result of $p=0.000$ (Tab. 2). Based on the results, it can be concluded that the majority of Slovak woodworking and furniture manufacturing enterprises fall under the category of FBs. This step was crucial in identifying FBs operating within WWAFI.

Tab. 1 Frequency table of the research sample.

Type of enterprise in the sample	Absolute frequency	Cumulative absolute frequency	Relative frequency (%)	Cumulative relative frequency (%)
Family business	252	252	69.42	69.42
Non-family business	111	363	30.58	100.00
Total	363		100	

Tab. 2 Test a hypothesis about a population proportion to hypothesis H1.

Hypothesis	Research area	Alternative hypothesis	f	n	u-test	p-value
H1	Share of FBs in woodworking and furniture industry	$\pi > 50\%$	69.42%	363	8.03	0.000

The survey focused on the use of controlling in FBs operating in the WWAFI. The priority was to determine whether there was a difference in the use of controlling between FBs and NFBs within WWAFI. To address this issue, the hypothesis H2 was formulated, suggesting that FBs of the WWAFI use controlling to a lesser extent than NFBs. The results revealed that controlling is employed by 17.06% of FBs and 27.03% of NFBs. The hypothesis H2 was tested using the Test a hypothesis about two population proportions. The analysis, presented in Tab. 3, yielded a p-value of 0.015, which is lower than the level of significance (0.05). As a result, the hypothesis H2 was accepted, indicating that FBs within WWAFI indeed use controlling to a lesser extent compared to NFBs.

Tab. 3 Test a hypothesis about two population proportions to hypothesis H2.

Hypothesis	Research area	Alternative hypothesis	f_{FBs}	N_{FBs}	f_{NFB}	N_{NFBs}	z-test	p-value
H2	Use of controlling, FBs vs. NFBs	$\pi_1 > \pi_2$	17.06%	252	27.03%	111	2.18	0.015

Given the above results, a question arises, why FBs of the WWAFI use controlling to a lesser extent than NFBs. The next two hypotheses relate to reasons preventing the use of controlling in FBs of the WWAFI. The hypothesis H3 assumes the rising trend of the use of controlling depending on the size of the enterprise. The hypothesis was confirmed by Pearson's Chi-square test of independence with the result of $p = 0.001$ (Tab. 4). While micro enterprises do not have the tendency to use controlling, small and medium-sized enterprises do have the tendency. Based on the given results, it can be concluded that the rising trend of the use of controlling in FBs of the WWAFI depends on the size of the enterprise.

Tab. 4 Pearson's Chi-square test of independence to hypothesis H3.

Hypothesis	Research area	Chi-square	sv	p-value	Contingency coefficient
H3	Rising trend of the use of controlling depending on the size of the enterprise	14.09	2	0.001	0.23

The phenomenon of the use of controlling in FBs was already investigated by Amat *et al.* (1994) and Goffee and Scase (1985) at the end of the last century and followed by many others, for example Prencipe *et al.* (2014), Senftlechner and Hiebl (2015), Helsen *et al.* (2017), Quinn *et al.* (2018). The authors point out that the use of controlling in FBs depends on factors that cannot be observed in non-family-type businesses. These are specifics of FBs that significantly differentiate them from NFBs. In this regard the last hypothesis H4 assumes that the main specific feature of FBs operating in the WWAFI hindering the use of controlling, is considered the concordance of ownership and management roles. The values of specifics selected by respondents of FBs are shown in Fig. 1. Most of the respondents agreed in the opinion that the reason leading them to believe that controlling was not necessary for their company was the concordance of ownership and management roles. This specific considerably exceeds the others. As the results of Interval estimate show, this specific affects from 29% to 41% of woodworking and furniture FBs (Tab. 5). Based on the results, it can be concluded that the concordance of ownership and management roles is the specific, that predominantly hinders the implementation and utilization of controlling in FBs operating in the WWAFI, and thus accepting the hypothesis H4.

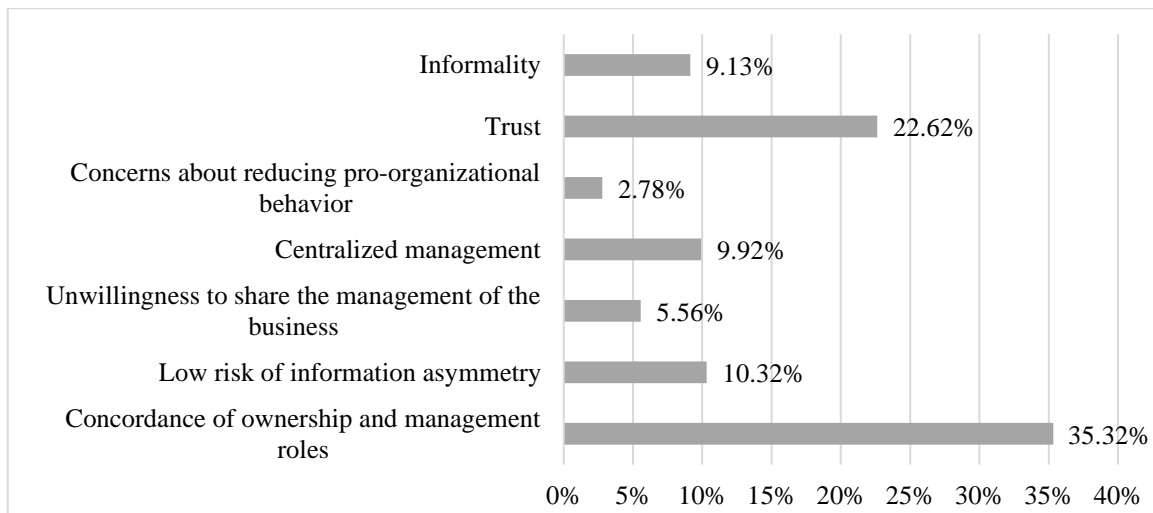


Fig. 1 Specifics of FBs hindering the use of controlling defined by FBs of WWAFI.
(Source: authors).

Tab. 5 Interval estimate to hypothesis H4.

Research area	f _i	n _i	95%-Interval estimate	
			lower level	upper level
Concordance of ownership and management roles	35.32%	89	29%	41%
Low risk of information asymmetry	10.32%	26	7%	14%
Unwillingness to share the management of the business	5.56%	14	3%	8%
Centralized management	9.92%	25	6%	14%
Concerns about reducing pro-organizational behavior	2.78%	7	1%	5%
Trust	22.62%	57	17%	28%
Informality	9.13%	23	6%	13%

A total of 252 Slovak FBs (69.42%) was identified in the research sample of 363 woodworking and furniture manufacturing enterprises. The results clearly show that the majority of Slovak woodworking and furniture manufacturing enterprises fall under the

category of FBs, thus confirming the hypothesis H1. The finding aligns with the results of the SBA study (2018), which estimated the percentage of family businesses (FBs) in Slovakia to be between 60% to 80% across all sectors. It is also consistent with the survey conducted by authors Kocianová *et al.* (2022), who reported that the share of Slovak FBs operating within the WWAFI ranges from 66% to 74%. FBs are the most widespread type of business worldwide (Hiebl *et al.*, 2019). They significantly contribute to the GDP and to job creation (Urbaníková *et al.*, 2020). There can be no doubt about the considerable relevance of FBs. However, the reality is that despite their importance, most of them do not survive the first generation (Labaki *et al.*, 2019). The business success or failure of an enterprise is often the result of decisions made by top managers. Although there are many aspects of FBs that distinguish them from NFBs, decision-making seems one of the most notable (Chrisman *et al.*, 2005; Penney, 2019). In connection with activities of FBs in the WWAFI in Slovakia, the situation of these businesses may be even more complicated. They face specific problems, while this negative status is reinforced by their long-term non-resolution (Drábek and Merková, 2017). The academic community is increasingly focusing its attention on research of FBs and, above all, their specifics, which significantly differentiate them from the non-family ones. It also found its way in the use of controlling. It can be expected that the utilization of controlling in FBs differs considerably from that in non-family type of enterprises (Hiebl, 2021). Many studies report that controlling tools are applied less frequently and the use of controlling is in general lower in FBs than in NFBs (García Pérez de Lema and Duréndez, 2007; Feldbauer-Durstmüller *et al.*, 2012a; Hiebl *et al.*, 2012; Prencipe *et al.*, 2014; Hiebl *et al.*, 2015; Andric and Kammerlander, 2017; Ulrich, 2018; Ruiz-Palomo *et al.*, 2019; Bürgel *et al.*, 2020). In this area, the results of the survey confirmed the expressed assumption of the hypothesis H2, that Slovak FBs operating in the WWAFI use controlling to a lesser extent compared to non-family ones. The application of controlling has been generally underestimated for a long time, especially in micro and small enterprises (Feldbauer-Durstmüller and Hiebl, 2015; Jánská *et al.*, 2017; Klementová *et al.*, 2017; Sedliačiková *et al.*, 2021a). Some studies suggest that less need for the introduction of controlling in FBs primarily appertains micro and small FBs (Hiebl *et al.*, 2013; Speckbacher and Wentges, 2012). The above corresponds to the results of the survey, which confirmed the assumption expressed in hypothesis H3. The hypothesis postulated a positive correlation between the size of the enterprise and the use of controlling in FBs of the WWAFI. As stated by Hiebl (2021), it can be assumed that from a certain size of the company, even FBs tend to rely more on controlling. FBs are characterized by a frequent concordance of ownership and management roles in one or several persons. It can be assumed that conflicts of interests (e.g. between an external manager who pursues short-term profit and an owner who pursues long-term goals of growth and sustainability) and thus information asymmetry (between owner and manager) occur less frequently or are less severe in these businesses than in non-family-type businesses (Hiebl, 2013a; Madison *et al.*, 2016; Quinn *et al.*, 2020; Hiebl *et al.*, 2019). There is a presumption that control systems are less relevant for these businesses, as members of FBs act in the best interest of the enterprise anyway and are not encouraged or guided to do so (Mitter, 2014; Quinn *et al.*, 2018). This explains the effort of members of FBs to ensure the long-term existence of the enterprise (Siebels and zu Knyphausen-Aufsess, 2012). Based on the results, the hypothesis H4 assuming that the main specific of FBs operating in the WWAFI hindering the use of controlling is considered the concordance of ownership and management roles, was accepted. The phenomenon of controlling is a very current and discussed topic. The complexity of today's business is increasing, and thus the requirements for decision-making support (Laval, 2018). Decision-making process is given increasing importance, especially

in conditions of market imbalances and economic downturn, which are increasingly common both on the domestic and global market (Grzegorzewska and Wieckowska, 2017). The economic crisis caused by the COVID-19 pandemic, as well as the current global economic and energy crisis caused by the war in Ukraine indicate that companies must make decisions about the future direction as efficiently as possible (Sedliačiková *et al.*, 2021a). As stated by Laval (2018), the traditional supplier of top management decision-making support is controlling. Many studies confirm that the implementation of controlling directly contributes to increasing the efficiency of management, as well as the efficiency of the enterprise as a whole (Bienkowska and Zgrzywa-Ziemak, 2014; Todorović-Dudić *et al.*, 2017; Písař and Bílková, 2019; Csikósová *et al.*, 2022). Enterprises using controlling have higher economic activity and stability (Písař and Bílková, 2019). In addition, many researchers also confirm the importance of the application of controlling tools in family-type businesses (Hiebl, 2021; Duréndez *et al.*, 2016; Ruiz-Palomo *et al.*, 2019; El Masri *et al.*, 2017; Mitter, 2014; Hiebl, 2013b).

CONCLUSION

The presented paper aimed to assess the use of controlling in FBs within the WWAFI in Slovakia compared to NFBs and to identify the underlying reasons for its implementation or lack thereof. A total of 363 Slovak woodworking and furniture manufacturing enterprises participated in the survey, out of which 252 were identified as FBs. The results of the survey clearly show that the majority of woodworking and furniture enterprises (69.42%) belong to FBs. FBs are characterized by their specifics, which significantly distinguish them from non-family ones. These influence the way FBs are managed and, thus, the decision-making process. It also found its way in the use of controlling. FBs are expected to use controlling to a lesser extent compared to non-family ones due to their specifics. The results of the survey showed, that controlling is used by 17.06% of FBs and 27.03% of NFBs of the WWAFI, thus confirming the assumption that Slovak FBs of the given sectors use controlling to a lesser extent than NFBs. Two reasons for its non-use were identified. The first one is the size of the enterprise. The correlation between the size of the enterprise and the implementation of controlling was verified. While micro enterprises do not have the tendency to use controlling, small and medium-sized enterprises do have the tendency. With regards to the specifics of FBs operating in the WWAFI concerning the use of controlling, most respondents agreed that the reason leading them to believe that controlling was not necessary for their company was the concordance of ownership and management roles. The share is estimated from 29% to 41%. The aim of the paper was met, thus, providing an insight into the situation of the use of controlling in FBs of the WWAFI in Slovakia and the reasons for its non-use. Based on the results, it can be concluded that FBs of WWAFI use controlling in an insufficient way and to a lesser extent than NFBs. For the success of FBs operating in the WWAFI, it is advised to implement modern management methods as controlling is. An effective use of controlling is a valuable resource for these businesses to achieve competitive advantages, financial health, performance and consequently sustainability. The presented findings are an incentive for further examination of differences in the use of controlling between family and non-family businesses of the WWAFI. The main limitation of the survey is that the achieved results are presented in a summary of woodworking and furniture manufacturing enterprises operating only in Slovakia. Further research should include more transition economies when comparing the use of controlling between family and non-family

businesses operating in the woodworking and furniture industry, e.g., the territory of the Visegrad Four.

REFERENCES

- Ahlrichs, F., 2012. Controlling of Sustainability: How to Manage a Sustainable Management. *Journal for Organizational Transformation & Social Change* 9, 141-153. https://doi.org/10.1386/jots.9.2.141_1
- Ali, Z., Bhaskar, S.B., 2016. Basic Statistical Tools in Research and Data Analysis. *Indian J Anaesth* 60, 662-669. <https://doi.org/10.4103/0019-5049.190623>
- Amat, J., Carmona, S., Roberts, H., 1994. Context and Change in Management Accounting Systems: A Spanish Case Study. *Management Accounting Research* 5, 107-122. <https://doi.org/10.1006/MARE.1994.1008>
- Andric, M., Kammerlander, N., 2017. Motive zum Verzicht auf Controlling in Familienunternehmen - eine Mediatoranalyse. *Zeitschrift für KMU und Entrepreneurship* 65, 223-251. <https://doi.org/10.3790/zfke.65.4.223>
- Bačíková, M., Janovská, A., 2018. *Základy metodológie pedagogicko-psychologického výskumu*. Šafárik Press, Košice.
- Bieńkowska, A., Zgrzywa-Ziemak A., 2014. Coexistence of Controlling and Other Management Methods. *Operations Research and Decisions* 24, 5-33. <https://doi.org/10.5277/ord140201>
- Bürgel, T.R., Derfuß, K., Feldermann, S., Hiebl, M.R.W., 2020. Budgetierung in Familienunternehmen. *Controlling & Management Review* 64, 22-29. <https://doi.org/10.1007/s12176-019-0069-7>
- Chrisman, J.J., Chua, J.H., Sharma, P., 2005. Trends and Directions in the Development of a Strategic Management Theory of the Family Firm. *Entrepreneurship Theory and Practice* 29, 555-575. <https://doi.org/10.1111/j.1540-6520.2005.00098.x>
- Comi, A., Eppler, M.J., 2014. Diagnosing Capabilities in Family Firms: An Overview of Visual Research Methods and Suggestions for Future Applications. *Journal of Family Business Strategy* 5, 41-51. <https://doi.org/10.1016/j.jfbs.2014.01.009>
- Csikósová, A., Čulková, K., Janošková, M., 2022. Controlling Tools Use in Business Processes Management. *TEM Journal* 11, 356-366. <https://doi.org/10.18421/TEM111-45>
- Davis, J. A., 2019. How Three Circles Changed the Way We Understand Family Business. [WWW Document]. URL <https://www.familybusinessmagazine.com/how-three-circles-changed-way-we-understand-family-business>
- Drábek, J., Merková, M., 2017. Analysis of Investment Effects in Wood Processing Industry of Slovakia, in: *Proceedings of 10th International Scientific Conference Woodema 2017: More Wood, Better Management, Increasing Effectiveness: Starting Points and Perspectives*. Prague, pp. 79-85.
- Duréndez, A., Ruíz-Palomo, D., García-Pérez-de-Lema, D., Diéguez-Soto, J., 2016. Management Control Systems and Performance in Small and Medium Family Firms. *European Journal of Family Business* 6, 10-20. <https://doi.org/10.1016/j.ejfb.2016.05.001>
- El Masri, T., Tekathen, M., Magnan, M., Boulianne, E., 2017. Calibrating Management Control Technologies and the Dual Identity of Family Firms. *Qualitative Research in Accounting & Management* 14, 157-188. <https://doi.org/10.1108/QRAM-05-2016-0038>
- Faeron, E., 2017. Sample Size Calculations for Population Size Estimation Studies Using Multiplier Methods with Respondent-Driven Sampling Surveys. *JMIR Public Health and Surveillance* 3, p. 59. <https://doi.org/10.2196/publichealth.7909>
- Feldbauer-Durstmüller, B., Duller, CH., Mayr, S., Neubauer, H., Ulrich, P., 2012. Controlling in Mittelständischen Familienunternehmen: Ein Vergleich von Deutschland und Österreich. *Zeitschrift für Controlling & Management* 56, 408-413. <https://doi.org/10.1365/s12176-012-0666-1>

- Feldbauer-Durstmüller, B., Hiebl, M.R.W., 2015. Aktuelle Trends und Entwicklungen im Controlling in und für KMU: Eine Einführung der Gastherausgeber. *ZfKE - Zeitschrift für KMU und Entrepreneurship* 63, 193-208. <https://doi.org/10.3790/zfke.63.3-4.193>
- Finstat 2022., Databáza všetkých slovenských firiem a organizácií (Database of all Slovak companies and organizations). [WWW Document]. URL <https://finstat.sk/databaza-firiem-organizacii>
- García Pérez De Lema, D., Duréndez, A., 2007. Managerial Behaviour of Small and Medium-Sized Family Businesses: An Empirical Study. *International Journal of Entrepreneurial Behaviour & Research* 13, 151-172. <https://doi.org/10.1108/13552550710751030>
- Goffee, R., Scase, R., 1985. Proprietorial control in family firms: some functions of 'quasi-organic' management systems. *Journal of Management Studies* 22, 53-68. <https://doi.org/10.1111/j.1741-6248.1991.00337.x>
- Grzegorzewska, E., Wieckowska, M., 2017. The Economic Profitability of Polish Furniture Market Against a Background of the Industry Sector, in: *Proceedings of the 10th WoodEMA International Scientific Conference: More Wood, Better Management, Increasing Effectiveness: Starting Points and Perspective*. Prague, pp. 218-224.
- Hajdúchová, I., Sedliačiková, M., Halaj, D., Krištofik, P., Mussa, H., Viszlai, I., 2016. The Slovakian Forest-Based Sector in the Context of Globalization. *Bioresources* 11, 4808-4820. <https://doi.org/10.15376/biores.11.2.4808-4820>
- Helsen, Z., Lybaert, N., Steijvers, T., Orens, R., Dekker, J., 2017. Management Control Systems in Family Firms: A Review of the Literature and Directions for the Future. *Journal of Economic Surveys* 31, 410-435. <https://doi.org/10.1111/joes.12154>
- Herrera, J., De Las Heras-Rosas, C., 2020. Economic, Non-Economic and Critical Factors for the Sustainability of Family Firms. *Journal of Open Innovation: Technology, Market and Complexity* 6, 1-22. <https://doi.org/10.3390/joitmc6040119>
- Hiebl, M.R.W., Feldbauer-Durstmüller, B., Duller, C., Neubauer, H., 2012. Institutionalisation of Management Accounting in Family Businesses: Empirical Evidence from Austria and Germany. *Journal of Enterprising Culture* 20, 405-436. <https://doi.org/10.1142/S0218495812500173>
- Hiebl, M.R.W., 2013a. Einfluss von Controlling-Systemen auf die Unternehmensführung mittelgroßer Familienunternehmen. *Controlling & Management Review* 57, 78-84. <https://doi.org/10.1365/s12176-013-0685-6>
- Hiebl, M.R.W., 2013b. Management Accounting in the Family Business: Tipping the Balance for Survival. *Journal of Business Strategy* 34, 19-25. <https://doi.org/10.1108/JBS-07-2013-0052>
- Hiebl, M.R.W., Feldbauer-Durstmüller, B., Duller, C., 2013. The Changing Role of Management Accounting in the Transition from a Family Business to a Non-Family Business. *Journal of Accounting & Organizational Change* 9, 119-154. <https://doi.org/10.1108/18325911311325933>
- Hiebl, M.R.W., Duller, C., Feldbauer-Durstmüller, B., Ulrich, P., 2015. Family Influence and Management Accounting Usage: Findings from Germany and Austria. *Schmalenbach Business Review* 67, 368-404. <https://doi.org/10.1007/BF03396880>
- Hiebl, M.R.W., Duller, Ch., Neubauer, H., 2019. Enterprise Risk Management in Family Firms: Evidence from Austria and Germany. *Journal of Risk Finance* 20, 39-58. <https://doi.org/10.1108/JRF-01-2018-0003>
- Hiebl, M.R.W., 2021. *Controlling in Familienunternehmen*. Praxishandbuch Controlling. Springer Gabler, Wiesbaden.
- Horvath, P., 2009. *Controlling*. Verlag Vahlen, München.
- Jánská, M., Celer, Č., Žambochová, M., 2017. Application of Corporate Controlling in the Czech Republic. In *Scientific papers of the University of Pardubice*, 24, 61-70.
- Klementová, J., Benčíková, D., Sedliačiková, M., 2017. Psychological Aspects of Controlling in Micro and Small enterprise. *Proceedings of Global Scientific Conference: Management and Economics in Manufacturing*. Zvolen, pp. 102-109.
- Kocianová, A., Sedliačiková, M., Schmidtová, J., Melichová, M., Hoghová, L., 2022. Prerequisites for the Development of the Wood-processing Family Enterprise. *Acta Facultatis Xylogiae Zvolen* 64, 133-146. <https://doi.org/10.17423/afx.2022.64.2.13>
- Krišťáková, S., Neykov, N., Antov, P., Sedliačiková, M., Reh, R., Halalisan, A., Hajdúchová, I., 2021. Efficiency of Wood-Processing Enterprises-Evaluation Based on DEA And MPI: A

- Comparison between Slovakia and Bulgaria for the Period 2014-2018. *Forests* 12. <https://doi.org/10.3390/F12081026>
- Labaki, R., Bernhard, F., Cailluet, L., 2019. The Strategic Use of Historical Narratives in the Family Business. *The Palgrave Handbook of Heterogeneity Among Family Firms*. Palgrave Macmillan, London.
- Labudová, V., Pacáková, V., Sipková, E., Šoltés, E., Vojtková, M., 2021. *Štatistické metódy pre ekonómov a manažérov*, Wolters Kluwer, Bratislava.
- Laval, V., 2018. *How to Increase the Value-added of Controlling*, Gruyter, Berlin.
- Loučanová, E., Kalamárová, M., Parobek, J., 2014. The Competitiveness of Wood Products from the Perspective of Used Material. *Acta Facultatis Xylologiae Zvolen* 57, 155-163. <https://doi.org/10.17423/afx.2015.57.2.16>
- Madison, K., Holt, D.T., Kellermanns, F.W., Ranft, A.L., 2016. Viewing Family Firm Behavior and Governance Through the Lens of Agency and Stewardship Theories. *Family Business Review* 29, 65-93. <https://doi.org/10.1177/0894486515594292>
- Malá, D., Sedliačiková, M., Benčíková, D., 2018. How Customer of Small and Medium Wood-Processing Slovak Enterprises Perceive a Green Product. *BioResources* 13, 1930-1950. <https://doi.org/10.15376/biores.13.1.1930-1950>
- Melichová, M., Kocianová, A., Poláková, N., Schmidtová, J., Sedliačiková, M., 2022. The Wood-processing Sector and its Potential to Become the Pillar of National Economy of Slovak Republic. *International Scientific Journals: Science. Business. Society* 7, 11-14.
- Mitter, C., 2014. Controlling in Familienunternehmen. *Zeitschrift für KMU und Entrepreneurship* 62, 345-352.
- MPSVR 2022. Schválená novela zlepši sociálne podnikanie a podporí rodinné podniky. [WWW Document]. URL <https://www.employment.gov.sk/sk/uvodna-stranka/informacie-media/aktuality/schvalena-novela-zleps-socialne-podnikanie-podpori-rodinne-podniky.html>
- NRSR, 2022. Parlamentná tlač 1214. . [WWW Document]. URL <https://www.nrsr.sk/web/Default.aspx?sid=zakony/cpt&ZakZborID=13&CisObdobia=8&ID=1214>
- Olšiaková, M., Loučanová, E., Paluš, H., 2016. Monitoring Changes in Consumer Requirements for Wood Products in Terms of Consumer Behavior. *Acta Facultatis Xylologiae Zvolen* 58, 137-147. <https://doi.org/10.17423/afx.2016.58.1.15>
- Pacáková, V., 2009. *Štatistické metódy pre ekonómov (Statistical methods for economists)*. Wolters Kluwer, Bratislava.
- Penney, C., Vardaman, J., Marler, L., Antin-Yates, V., 2019. An Image Theory of Strategic Decision-Making in Family Businesses. *Journal of Family Business Management* 9, 451-467. <https://doi.org/10.1108/JFBM-05-2019-0032>
- Petlína, A., Koráb, V., 2015. Family Business in the Czech Republic: Actual Situation. *Trends Economics and Management* 9, 32-42.
- Písař, P., Bílková, D., 2019. Controlling as a Tool for SME Management with an Emphasis on Innovations in the Context of Industry 4.0. *Equilibrium, Quarterly Journal of Economics and Economic Policy* 14, 763-785. <https://doi.org/10.24136/eq.2019.035>
- Prencipe, A., Bar-Yosef, S., Dekker, H.C., 2014. Accounting Research in Family Firms: Theoretical and Empirical Challenges. *European Accounting Review* 23, 361-385. <https://doi.org/10.1080/09638180.2014.895621>
- Quinn, M., Hiebl, M.R.W., Moores, K., Craig, J.B., 2018. Future Research on Management Accounting and Control in Family Firms: Suggestions Linked to Architecture, Governance, Entrepreneurship and Stewardship. *Journal of Management Control* 28, 529-546. <https://doi.org/10.1007/s00187-018-0257-1>
- Quinn, M., Hiebl, M., Mazzotta, R., Veltri, S., 2020. Accounting for Family and Business Overlaps. *Journal of Management History* 26, 249-276. <https://doi.org/10.1108/jmh-04-2019-0032>
- Ramadani, V., Hoy, F., 2015. Context and Uniqueness of Family Businesses. *Family Businesses in Transition Economies*, 9-37. https://doi.org/10.1007/978-3-319-14209-8_2

- Ruiz-Palomo, D., Diéguez-Soto, J., Duréndez, A., Santos, J.A.C., 2019. Family Management and Firm Performance in Family SMEs: The Mediating Roles of Management Control Systems and Technological Innovation. *Sustainability* 11, p. 3805. <https://doi.org/10.3390/su11143805>
- SBA 2020. Bariéry rodinného podnikania. [WWW Document]. URL http://www.sbagency.sk/sites/default/files/bariery_rodinneho_podnikania_na_slovensku_0422020.pdf
- SBA 2018. Štúdia rodinného podnikania na Slovensku. [WWW Document]. URL https://www.sbagency.sk/sites/default/files/3_studia_rodinneho_podnikania_na_slovensku.pdf
- Sedliačiková, M., Hajdúchová I., Krištofik, P., Viszlai, I., Gaff, M., 2016. Improving the Performance of Small and Medium Wood-Processing Enterprises. *BioResources* 11, 439-450. <https://doi.org/10.15376/biores.11.1.439-450>
- Sedliačiková, M., Moresová, M., Malá, D., Rowland, Z., 2021a. Controlling – an empirical study and proposal of a relevant model for sustainable business and development in Slovakia. *Journal of Business Economics and Management* 22, 1252-1268. <https://doi.org/10.3846/jbem.2021.15393>
- Sedliačiková, M., Moresová, M., Drábek, J., Kupčák, V., 2021b. The Significance of Controlling in Enterprises in Emerging Economies. *Central European Business Review* 10, 99-113. <https://doi.org/10.18267/j.cebr.289>
- Senftlechner, D., Hiebl, M.R.W., 2015. Management Accounting and Management Control in Family Businesses: Past Accomplishments and Future Opportunities. *Journal of Accounting & Organizational Change* 11, 573-606. <https://doi.org/10.1108/JAOC-08-2013-0068>
- Siebels, J.-F., Zu Knyphausen-Aufsess, D., 2012. A Review of Theory in Family Business Research: The Implications for Corporate Governance. *International Journal of Management Reviews* 14, 280-304. <https://doi.org/10.1111/j.1468-2370.2011.00317.x>
- Speckbacher, G., Wentges, P., 2012. The Impact of Family Control on the Use of Performance Measures in Strategic Target Setting and Incentive Compensation: A Research Note. *Management Accounting Research* 23, 34-46. <https://doi.org/10.1016/j.mar.2011.06.002>
- Szymanska, K., 2015. The Importance of Family Businesses in the Economy. *Economic and Social Development* 4, 630-635.
- Tamulevičienė, D., 2019. Evaluation of the Position of the Subject of Controlling in Medium-Sized Companies. *Proceedings of the Conference: New Challenges of Economic and Business Development: Incentives for Sustainable Economic Growth*. Riga, pp. 829-841.
- Tamulevičienė, D., Subačienė, R., 2019. Integrating a Behavioral Aspect When Developing the Structure of a Controlling System Oriented Towards Increasing a Company's Value. *Zeszyty Teoretyczne Rachunkowości* 104, 129-148. <https://doi.org/10.5604/01.3001.0013.4359>
- Todorović-Dudić A., Stanišić M., Perović V., 2017. Contribution of Controlling to Business Efficiency. *Industrija* 45, 25-44. <https://doi.org/10.5937/industrija45-11003>
- Ulrich, P., 2018. Integration von Risikoaspekten in operative Planung und Budgetierung: Was unterscheidet mittelständische Familienunternehmen von anderen Unternehmen? *Zeitschrift für KMU und Entrepreneurship* 66, 13-33. <https://doi.org/10.3790/zfke.66.1.13>
- Urbaníková, M., Štubňová, M., Papcunová, V., Hudáková, J., 2020. Analysis of Innovation Activities of Slovak Small and Medium-Sized Family Businesses. *Administrative Sciences* 10, 1-19. <https://doi.org/10.3390/admsci10040080>
- Vitezić, N., Vitezić, V., 2015. A Conceptual Model of Linkage between Innovation Management and Controlling in the Sustainable Environment. *The Journal of Applied Business Research* 31, 175-184. <https://doi.org/10.19030/jabr.v31i1.8999>
- Yuan, X.H., 2019. A Review of Succession and Innovation in Family Business. *American Journal of Industrial and Business Management* 9, 974-990. <https://doi.org/10.4236/ajibm.2019.94066>

ACKNOWLEDGMENT

This research was supported by Slovak Research and Development Agency, projects number APVV-18-0378, APVV-20-0004, APVV-21-0051, APVV-22-0238, and also project VEGA no. 1/0011/24.

AUTHORS' ADDRESSES

Ing. Natália Poláková (ORCID: 0000-0002-0107-623X)
prof. Ing. Mariana Sedliačiková, PhD. (ORCID: 0000-0002-4460-2818)
Technical University in Zvolen
Faculty of Wood Sciences and Technology, Department of Business Economics
T. G. Masaryka 24, 960 01 Zvolen, Slovakia
xpolakovan@is.tuzvo.sk
sedliacikova@tuzvo.sk

Mgr. Jarmila Schmidtová, PhD. (ORCID: 0000-0003-3985-9616)
Technical University in Zvolen
Faculty of Wood Science and Technology, Department of Mathematics and Descriptive
Geometry
T.G. Masaryka 24, 960 01 Zvolen, Slovakia
jarmila.schmidtova@tuzvo.sk