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Controlling tools in family and non-family businesses: A case study of woodworking and furniture industry

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Abstract

Research background: Many studies point to the fact that the use of controlling in family businesses differs from that in non-family businesses and depends on factors that cannot be

observed in non-family businesses. The research into the application of controlling tools in family and non-family businesses operating in the woodworking and furniture industry in Slovakia as a unique interconnection of the issues of family businesses, controlling and the Slovak woodworking and furniture industry has not been so far carried out.
Purpose of the article: The aim of the paper is to identify significant differences in the application of tools of individual controlling subsystems between family and non-family businesses operating in the woodworking and furniture industry in Slovakia on the basis of a comprehensive mapping of the utilization of controlling tools in the businesses in question.
Methods: The mapping of the issue was carried out by questionnaire-based method. In total, seven hypotheses were formulated. The validity of the assumed hypotheses was verified by two sample z-test. To generalize the obtained results to the entire basic set, verification of the minimum sample size was carried out. The representativeness of the sample was verified by the Pearson's Chi-square test of goodness-of-fit.
Findings & value added: Based on the findings, it can be concluded that there are indeed significant differences in the use of controlling tools between family and non-family businesses operating in the industries in question. The results have showed the existence of significant differences in the use of tools of all examined controlling subsystems. It can be concluded that the application of controlling tools in the family businesses is significantly different from that in the non-family businesses. It can also be observed that family businesses of the industries in question tend to use controlling in an insufficient way and in general to a lesser extent compared to non-family businesses. The main benefit of the paper is the identification of the use of controlling tools in Slovak family businesses operating in the woodworking and furniture industry compared to non-family businesses. This knowledge can be valuable for practitioners and researchers in the field. The contribution also refers to the future direction of the development of the Slovak woodworking and furniture family businesses.

Introduction

Family businesses (FBs) represent the dominant and most ancient form of making business and are extremely important for the national economy (Comi & Eppler, 2014). They prevail in traditional sectors, such as the wood-processing industry (WPI) (SBA, 2020). Miroshnychenko *et al*. (2020) mention that the share of FBs in individual national economies varies between 70-95%, while they assume that their share in the EU reaches approximately 85%. Sedliačiková *et al*. (2022) state that 70–90% of all businesses in Slovakia are FBs. According to the SBA (2020), they create up 60% to 80% of the total number of Slovak small and medium-sized enterprises, produce 30-40% of the value of GDP, and participate in up to 40% of employment. The long-term universal contribution of the presented paper is to point out their importance as a dominant form of business for the national economy, not only in the wood processing industry, and to emphasize the specifics and differences of this segment in the context of using an

important method for management, namely controlling, compared to non-family businesses.

WPI in Slovakia represents an important area of industry and has the potential to become a pillar of the national economy (Melichová *et al.*, 2022). Business success or failure of an enterprise is often the result of decisions made by top managers. Although there are many FB aspects distinguishing them from non-family businesses (NFBs), decision-making seems to be one of the most striking (Penney, 2019). In connection with the operation of the FBs in the woodworking and furniture industries (WAFI), the situation of these businesses is even more intricate. WPI businesses in Slovakia face specific problems, and this negative situation strengthens their long-term failure of solution (Drábek & Merková, 2017). In connection with the application of controlling in the FBs operating in the WAFI in Slovakia, this is a hitherto unaddressed issue. The complexity of current entrepreneurship has been increasing, and therefore, the demands for decision-making support has also increased (Laval, 2018). Proper economic decisions are more and more important, especially in conditions of market imbalances and economic downturn, which are more common in both domestic and global markets (Grzegorzewska & Wieckowska, 2017). The economic crisis caused by the COVID-19 pandemic, as well as the current global economic and energy crisis induced by the war conflict in Ukraine, suggest that enterprises shall make very effective decisions about the future direction (Sedliačiková *et al.*, 2021a). As stated by Laval (2018), controlling is a traditional promoter of top management decision support. Benedic (2015) defines controlling as one of the new approaches that helps management to adapt to new circumstances, build vital and strong organizations able to face new challenges.

The phenomenon of the use of controlling in FBs was dealt with by several authors such as Prencipe *et al.* (2014), Senftlechner and Hiebl (2015). They point out that the use of controlling in FBs considerably differs from that in NFBs and depends on factors that cannot be observed in NFBs. The factors are specifics of FBs that significantly distinguish them from non-family ones. Many studies report that controlling tools are applied less frequently and the use of controlling is in general lower in FBs than in NFBs (Feldbauer-Durstmüller *et al.*, 2012; Hiebl *et al.*, 2012; Prencipe *et al.*, 2014; Hiebl *et al.*, 2015; Ruiz-Palomo *et al.*, 2019; Sedliačiková *et al.*, 2022; Poláková *et al.*, 2023).

Thus, the paper explores the level of utilisation of tools of individual controlling subsystems in FBs and NFBs operating in the WAFI in Slovakia and aims to answer the following research question: Are there any significant differences in the use of tools of individual controlling subsystems, e.g. strategic, operational, cost, financial, investment, quality and personnel controlling between FBs and NFBs operating in the WAFI?

The research question was inspired by several scientific studies (Chirico, 2019; Fernández-Méndez & Arrondo-García, 2021; Stavrou, 2021; Calabrò, 2022; Chrisman & Patel, 2022; D'Allura *et al*., 2022; Williams *et al*., 2022; Cuevas-Rodríguez, 2023; Kathuria *et al*., 2023; Memili *et al*., 2023; Minichilli *et al*., 2023; Yu, 2023; Wei *et al*., 2024) that dealt with others or with verry similar problems, but they solved this topic partially, not comprehensively. These studies examined enterprises without differentiating their industry. Some studies were focused on the segment of small and medium enterprises (Del Bosco & Bettinelli, 2020; Biel & Ślusarczyk, 2022; Salvato & Aldrich, 2022; Discua Cruz *et al*., 2023).

Overall, the paper contributes to the current state on the issue of the utilization of controlling in FBs by offering a comprehensive analysis of the current state of application of controlling tools in FBs and NFBs operating in WAFI. It identifies significant differences in the use of controlling tools between the FBs and NFBs, providing valuable guidance for researchers and Slovak FBs of the WAFI themselves in navigating the complexities of the controlling concept and its design.

The subsequent sections of this paper are structured as follows: the following section presents the Literature review substantiating the study. Following this, the Research methods section introduces the data, sample, and methods utilized. The ensuing Results section outlines the findings obtained and the Discussion section explores the discourse surrounding these results. Finally, the Conclusions section summarizes the paper, providing conclusions that include reflections on limitations, theoretical and practical implications, and suggestions for future research directions.

This paper presents the research on controlling in the woodworking and furniture industry in Slovakia in the context of the family business. It is a unique connection of various research problems and a creation of a new paradigm for the direction of scientific research, which has not yet been carried out so, in this context, one-country research is also important and interesting for an international audience.

Literature review

The position of FBs as a stabilizing element of economies is predetermined mainly by their ability to advance to achieve long-term growth and sustainability goals, to respond flexibly to changes in the business environment, and also to face crises (Parada & Gimeno, 2016). A family business can be defined as a complex system that is characterized by the interconnection of family and business, where family, ownership and business are simultaneously intertwined (Davis, 2019). The peculiarities of the relationship between business and family mean that FBs are managed in a specific way and differently from NFBs (Herrera & De Las Heras-Rosas, 2020). The specifics of FBs such as ownership in the hands of the family, family involvement in business management, close relationship between managers and the family, striving for the long-term existence, specific goals, relevance of non-economic factors (socio-emotional wealth) can be identified as key factors influencing decision-making and management (Prencipe *et al.*, 2014; Gomez-Mejia *et al.*, 2014; Steier *et al.*, 2015; Kallmuenzer *et al.*, 2018a; Metsola & Kuivalainen, 2021).

The fundamental problem of the FBs in many countries is the lack of a legally established definition of the concept of a family business or family entrepreneurship, which hinders targeted support for these enterprises (SBA, 2020; Krošláková *et al.*, 2021). The legislative definition of the concept of family business or family entrepreneurship has been established in Slovakia only recently by an amendment to Act No. 112/2018 Coll. on Social Economy and Social Enterprises with effect from July 2023. According to this definition, a family business is characterized as a company, a cooperative and a natural person — entrepreneur, provided that several members of the common family have statutory ties to the business, whereby spouses, direct relatives, siblings, persons related to each other up to the fourth degree and their spouses are considered members of the common family, and the relationship of the family members to the company must meet the following conditions:

– In the case of a company:
  a) at least two family members directly or indirectly exercise the majority of voting rights and at least one family member is a statutory body or a member of a statutory body,
  b) at least two family members benefit economically from the business more than 50% of the after-tax profit or

c) one member of the common family is the sole partner or sole shareholder and at the same time performs the function of a statutory body or a member of a statutory body and at least one other family member is a statutory body, managing director, member of the supervisory board or is in an employment relationship with this company.

– For cooperatives, the first or second condition applicable to companies must be met.
– The condition for a natural person – entrepreneur shall be that at least one family member must be in an employment relationship with the natural person – entrepreneur.
– If an external investor enters the company or 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 time period (NRSR, 2022).

WPI consists of the woodworking, furniture and pulp-paper industries. It uses and processes renewable natural raw material — wood pulp (Potkány *et al.*, 2018). The strengths of the WPI in Slovakia include a rich supply of wood raw material (Hajdúchová *et al.*, 2016) and also the potential in terms of ecological direction (Krišťáková *et al.*, 2021). The weaknesses of the Slovak WPI include obsolete and worn-out technical and technological equipment and the related lack of innovation, insufficient support and development strategy, as well as insufficient product finalization (Krišťáková *et al.*, 2021). Hajdúchová *et al.* (2016) state that one of the areas on which WPI businesses should focus is the introduction of innovations and modern management methods, which include controlling.

The fundamental task of controlling is to generate compacted information with high reporting capability and in real-time, and thus to prepare an adequate environment for managers regarding decision making (Horváth & Partners, 2021). The controlling system contains various but interconnected subsystems that support and complement each other, and whose interaction helps to make optimal decisions and thereby achieve the set corporate goals (Sedliačiková *et al.*, 2021b). In terms of time, corporate controlling is divided into strategic and operational controlling (Sedliačiková *et al.*, 2021a). Operational controlling is subsequently divided into cost, financial, investment, quality and personnel controlling (Sedliačiková, 2015). An essential tool of corporate controlling is the management cycle with clear objectives, planning and measurement of achieved results and

active management with countermeasures through the use of an appropriate toolkit of individual controlling subsystems (Vitezić & Vitezić, 2015).

The academic community is increasingly directing its focus toward researching FBs, particularly their unique characteristics that differentiate them from NFBs. This attention has extended to the field of controlling practices. It is anticipated that the application of controlling in FBs differs significantly from that in NFBs (Hiebl, 2021). Numerous studies indicate that controlling tools are utilized less frequently, and overall, the adoption of controlling practices is lower in FBs compared to NFBs (Feldbauer-Durstmüller *et al.*, 2012; Hiebl *et al.*, 2012; Prencipe *et al.*, 2014; Hiebl *et al.*, 2015; Ruiz-Palomo *et al*., 2019; Sedliačiková *et al.*, 2022; Poláková *et al.*, 2023).

FBs often feature the concordance of ownership and management roles being held by one or more individuals. This concordance leads to the assumption that conflicts of interest (such as those between an external manager prioritizing short-term profit and an owner focusing on long-term growth and sustainability goals), and information asymmetry (between owner and manager), are less prevalent or less severe in these businesses compared to NBSs (Hiebl, 2013b; Hiebl *et al.*, 2019). The lesser reliance on controlling by FBs in comparison to NFBs is also tied to the belief that control systems hold less relevance for these businesses. This stems from the notion that members of FBs inherently operate in the best interest of the organization without explicit encouragement or direction (Mitter, 2014). Conversely, highly formalized controlling tools may be viewed by certain stakeholders as a signal of distrust, potentially diminishing their inclination towards pro-organizational behavior. FBs are distinguished by a greater degree of informality, centralization, and reliance on trust compared to NFBs (Senftlechter & Hiebl, 2015). The distinct culture of FBs characterized by traits like flexibility, low formalization, and close ties with their environment, can significantly shape the structure of their controlling systems. Several studies propose that the reduced necessity for implementing controlling in FBs primarily pertains to micro and small family enterprises (Hiebl *et al.*, 2013b). According to Hiebl (2021), it is conceivable that beyond a certain company size, even FBs tend to place greater reliance on controlling. Various studies explored factors influencing the adoption and structure of controlling, including size, age, degree of diversification, internationalization, and lifecycle stages of FBs (Songini & Gnan, 2015; Brück *et al.*, 2018; Poláková *et al.*, 2023). The findings indicate a pattern of increased

utilization of controlling as the company grows, suggesting its growing importance for FBs (Hiebl, 2021).

The aim of the paper is to identify significant differences in the application of tools of individual controlling subsystems between FBs and NFBs operating in the WAFI in Slovakia on the basis of a comprehensive mapping of the utilization of controlling tools in the businesses in question.

Based on the published outputs on the issue of FBs, controlling, the use of controlling in FBs and WPI with a focus on the WAFI, the following hypotheses were formulated:

H1: *It is assumed that there are significant differences in the use of strategic controlling tools between family and non-family businesses operating in WAFI.*

Several authors agree that FBs use fewer strategic controlling tools than NFBs (Neubauer *et al*., 2012; Feldbauer-Durstmüller *et al*., 2012; Kallmuenzer *et al*., 2018a; Biel & Ślusarczyk, 2022).

H2: *It is assumed that there are significant differences in the use of operational controlling tools between family and non-family businesses operating in WAFI.*

FBs tend to use fewer planning tools compared to NFBs (Hiebl *et al*., 2013; Hiebl, 2013c; Samuelsson *et al*., 2016; Biel & Ślusarczyk, 2022).

H3: *It is assumed that there are significant differences in the use of cost controlling tools between family and non-family businesses operating in WAFI.*

Research shows that small and medium-sized FBs use fewer cost controlling tools (Feldbauer-Durstmüller *et al*., 2012; Senftlechner & Hiebl, 2015; Songini *et al*., 2018), as well as less sophisticated tools (Neubauer *et al*., 2012; Samuelsson *et al*., 2016; Yu, 2023) compared to small and medium NFBs.

H4: *It is assumed that there are significant differences in the use of financial controlling tools between family and non-family businesses operating in WAFI.*

FBs use less and also less sophisticated formal financial activities, or tools and accounting procedures compared to NFBs (Senftlechner & Hiebl, 2015; Hiebl *et al*., 2019; Yu, 2023).

H5: *It is assumed that there are significant differences in the use of investment controlling tools between family and non-family businesses operating in WAFI.*

FBs generally have a greater risk aversion compared to NFBs (Hiebl, 2013a; Dielenman, 2019; Zhuravlyov, 2019; Kathuria *et al*., 2023), invest less in innovation, but on the other hand show an increased rate of conversion of innovative inputs to outputs, which ultimately manifests itself as a higher rate of innovation compared to NFBs (Duran *et al*., 2016).

H6: *It is assumed that there are significant differences in the use of quality controlling tools between family and non-family businesses operating in WAFI.*

FBs apply less the Total Quality Management (TQM) compared to NFBs and generally adopt the TQM philosophy only slowly (Danes *et al*., 2008; Tan *et al*., 2015; Alhih *et al*., 2020; Floris *et al*., 2021).

H7: *It is assumed that there are significant differences in the use of personnel controlling tools between family and non-family businesses operating in WAFI.*

FBs apply human resource management practices differently compared to NFBs (Pittino & Visintin, 2013; Sánchez-Marín *et al*., 2019; Stavrou, 2021) and in general tend to pay less attention to the area of human resource management (HRM) (Hoon *et al*., 2019; Discua Cruz *et al*., 2023; Memili, *et al*., 2023). The most important empirical problems that are common in the reasearch of FBs are the specifics of FBs, succession, nepotism, financing, resolution of conflicts in FBs, the issue of internal and external determinants that are barriers in FBs or singularity of the management of FBs.

Methods

The methodological approach of this paper was structured into several logically organized parts. During the first stage, an analysis of secondary sources was carried out, which was focused on the issue of family business in the context of the wood-working and furniture industry in which the research was conducted and on the issue of controlling. In this part, the methods of analysis, synthesis, summarization, description, comparison, deduction and analogy were used. Based on the published outputs on the issue of FBs, con-

trolling, the use of controlling in FBs and WPI with a focus on the WAFI, the following hypotheses were formulated:

The second phase was focused on the elaboration of a questionnaire based on the acquired theoretical knowledge. Subsequently, a questionnaire pretest was carried out on a sample of 30 respondents. The final questionnaire consisted of 27 questions divided into two main sections. The first section was addressed to businesses operating in WAFI (FBs and NFBs) and the second one was addressed only to FBs. FBs and NFBs were identified according to the legally anchored definition mentioned above. If the respondent confirmed the validity of any of the above features of the family business on behalf of the company, it was classified as a family business. Otherwise, the business was identified as non-family.

The research was carried out from December 2022 to June 2023, which was the third phase. An electronic questionnaire placed on the Google Forms domain was distributed to e-mail contacts of woodworking and furniture enterprises. According to the Finstat database (2022), a total of 3,573 enterprises operating in WAFI were active in the reporting period. The sample consisted of 2,500 randomly selected woodworking and furniture enterprises according to the SK NACE classification of economic activities (Division C16 Processing and manufacture of wood and cork products except furniture, manufacture of straw and plaiting materials with all groups and classes for woodworking enterprises and Division C31 Manufacture of furniture for furniture enterprises). The return rate of the questionnaire reached 14.52%.

The fourth phase was focused on the processing of data obtained from the survey. The validity of the assumed hypotheses was verified using relevant statistical methods in the Statistica 12 program. Verification of the above hypotheses was preceded by verification of the minimum sample size (n), which is a condition for generalizing the obtained results to the entire population of woodworking and furniture businesses operating in Slovakia. This was determined according to the following formula (Faeron, 2017):

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

where "z" is the standard normal deviate appropriate for the desired confidence level, "p" is a point estimate of the population proportion, "e" is the tolerable error level, and "N" is the population size.

The representativeness of the sample was verified by the Pearson Chi-square test of goodness-of-fit, which serves to verify the conformity of the empirical distribution according to two characteristics of the basic sample. These were the classification in the category according to the SK NACE of economic activities and the size of the enterprise. The test characteristics are as follows (Pearson, 1900):

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i} \tag{2}$$

where "O_i" is an observed count for category *i*, "E_i" is an expected count for category *i*, and "k" is the number of categories.

Verification of the validity of the assumed hypotheses was carried out by means of the two-sample z-test at the confidence level $\alpha = 0.05$, i.e. the above is claimed with 95% reliability. The two-sample z-test is used to test the statistical hypothesis, which claims that the parameters of two alternative distributions are the same in both basic sets. The test characteristics are as follows (Lind, 2020):

$$z = \frac{P_1 - P_2}{\sqrt{\frac{P_1(1-P_1)}{n_1} + \frac{P_2(1-P_2)}{n_2}}} \tag{3}$$

where "P_1" and "P_2" are the point estimates of two population proportions, and "n_1", "n_2" are respective sample sizes.

Detailed survey results are presented in the following section of the paper. The last phase was focused on the evaluation, comparison and discussion with previous findings and authors.

There could be some strengths and weaknesses identified in the methodology and its findings. Despite limited access to the respondents we managed to meet minimum sample size and its representativness. Unfortunately, even with a large enough sample size, there is no guarantee that the sampled enterprises use controlling in practice.

Results

In total, 363 Slovak business entities operating in WAFI according to the SK NACE classification of economic activities participated in the survey, of which 73.83% were woodworking enterprises (division C16) and 26.17%

were furniture enterprises (division C31). Formula (1) for a population of finite size according to Faeron (2017) was used to determine the minimum sample size. With a population size of 3,573 businesses as stated in the article, a chosen confidence of 95% and a specified precision of 5%, the calculation is 346.86 businesses. In our study, we worked with a research sample of 363 enterprises, so the minimum sample size requirement is met. The sample of respondents is sufficient to generalize the research results for the Slovak WAFI sector. 252 enterprises were identified as family (69.42%) and 111 as non-family businesses (30.58%) based on the legislative definition above. Most businesses belong to micro-enterprises (75.76%) and small enterprises (20.66%). 48.21% businesses operate at the national level and 41.60% at the international level. Most of these businesses have been operating on the market for 6-15 years (33.06%) and 16-25 years (28.93%). The minimum sample size was set at 347 Slovak woodworking and furniture enterprises under the conditions of a permissible error of 5% (e = 0.05), and confidence level of 95% (z = 1.96), known basic sample size (N = 3,573) and the parameter p = 0.5. As 363 enterprises took part in the survey, the condition of the minimum sample size was met and the survey results can be generalized to the entire population of WAFI. The condition of representativeness of the sample according to two characteristics of the basic sample (membership in the category according to SK NACE classification of economic activities p = 0.685; enterprise size p = 0.728) was met. The distribution of enterprises in the research sample corresponds to the distribution of the population of woodworking and furniture enterprises in Slovakia and the size of these enterprises.

The results have revealed several significant differences in the use of strategic controlling tools between FBs and NFBs Testing of the hypothesis by the two-sample z-test showed a p-level lower than the confidence level α (α = 0.05) in case of the tools: opportunity and threat analysis (p = 0.000), industry and competition analysis (p = 0.000), industry attractiveness (p = 0.000), analysis of strategic groups in the industry (p = 0.000), industry life cycle curve (p = 0.000), SWOT analysis (p = 0.010) and BSC (p = 0.017) (Table 1), while these tools are applied to a greater extent by the NFBs. Hypothesis H1 was accepted with 95% reliability, which confirms the assumption that there are significant differences in the use of strategic controlling tools between FBs and NFBs of WAFI.

Significant differences were also confirmed in the use of operational controlling tools, however to a lesser extent compared to strategic controlling.

Significant differences could be confirmed by the two-sample z-test for three of nine tools of this subsystem based on the p-level value lower than the confidence level α ($\alpha = 0.05$), namely for the tools: profit and loss statement ($p = 0.005$), calculation of planned costs ($p = 0.003$) and make or buy decision ($p = 0.000$) (Table 2). A notable, but not significant, difference was proven in the use of the short-term profit/loss calculation tool. These are applied to a greater extent by NFBs. Based on the above, the H2 hypothesis could be accepted with 95% reliability, which means that there are significant differences in the use of operational controlling tools between FBs and NFBs of WAFI.

In the area of cost controlling tools, the most significant differences between FBs and NFBs can be observed. They have been confirmed for most tools of the subsystem, and these tools are applied to a greater extent by NFBs. Testing of the H3 hypothesis by two sample z-test has showed a lower p-level than the confidence level α ($\alpha = 0.05$) for the following tools: budgeting ($p = 0.000$), price calculations based on full costs ($p = 0.033$), process calculation ($p = 0.041$), cost analysis ($p = 0.033$), variable cost calculation ($p = 0.000$), which manifested the most significant difference together with budgeting and monitoring of the cover contribution (also a significant difference in use) ($p = 0.001$) (Table 3). Based on the above, it can be stated with 95% reliability that there are significant differences in the use of cost controlling tools between FBs and NFBs and the H3 hypothesis can be accepted.

Significant differences can be confirmed in the use of some financial controlling tools. These tools are: activity indicators ($p = 0.007$), debt indicators ($p = 0.010$), market value indicators ($p = 0.005$), operational indicators ($p = 0.032$) and financial control ($p = 0.005$) (Table 4). More striking differences (but not very significant) can also be observed in the use of financial planning and controlling of working capital. These tools are again applied to a greater extent in NFBs. Hypothesis H4 was verified by a two-sample z-test at a significance level of $\alpha = 0.05$. Based on the obtained results, it can be concluded that there are significant differences between the FBs and NFBs of WAFI in the use of financial controlling tools and the H4 hypothesis can be accepted with 95% reliability.

By testing of the H5 hypothesis through the two-sample z-test, significant differences were also manifested in the use of investment controlling tools. However, these tools are applied to a greater extent by the FBs, in contrast to the tools of the previous subsystems mentioned above. These are dynamic investment controlling tools as net present value These are dynamic invest-

ment controlling tools as net present value (p = 0.033) (Table 5). Based on the above, it can be claimed with 95% reliability that there are significant differences between FBs and NFBs of WAFI in the use of investment controlling tools and the H5 hypothesis can be accepted. It can also be observed that static tools are used to a greater extent by NFBs and in terms of other dynamic tools, these are used to a greater extent by FBs. However, significant differences could not be confirmed for these tools.

Significant differences were also proven in the use of quality controlling tools by testing the H6 hypothesis with the two-sample z-test. These were reflected in the use of tools such as monitoring the cost of prevention (PAF model) (p = 0.023), monitoring the cost of internal errors (PAF model) (p = 0.005), measuring process performance using deviations (p = 0.000), where the p-level showed a value lower than the confidence level α ($\alpha = 0.05$) (Table 6). These tools are applied to a greater extent by NFBs. Based on the above, the assumption expressed in hypothesis H6 about the existence of significant differences in the use of quality controlling tools between the FBs and NFBs of the sectors in question with 95% reliability can be confirmed.

Significant differences in the application of personnel controlling tools were determined for: personnel indicators and their monitoring in the field of costs and remuneration (p = 0.049), training and education (p = 0.002), and personnel management (p = 0.005) (Table 7), which are applied to a greater extent by NFBs. The hypothesis was tested by a two-sample z-test at a significance level of $\alpha = 0.05$. Based on the above, the H7 hypothesis can be accepted, which assumes that there are significant differences in the use of personnel controlling tools between the FBs and NFBs. This can be confirmed with 95% reliability.

Discussion

FBs are characterized by specific characteristics, the most important of which seems to be socio-emotional wealth affecting both strategic and operational decisions (Chrisman & Patel, 2012; Cruz *et al.*, 2014; Chang & Mubarik, 2021). Strategic and also operational decisions are primarily to protect the values and identity of the family. However, there is a problem that FBs do not always consciously and objectively consider the opportunities or threats they face, or they may lack information about the potential impact of decisions on the enterprise as a whole (Penney *et al.*, 2019). Several authors agree that FBs

use fewer strategic controlling tools than NFBs (Neubauer *et al.*, 2012; Feldbauer-Durstmüller *et al.*, 2012; Kallmuenzer *et al.*, 2018b; Biel & Ślusarczyk, 2022) and also tend to use less sophisticated strategic controlling tools such as BSC (Neubauer *et al.*, 2012). This corresponds to the results on the basis of which it was possible to accept the Hypothesis H1, which assumes that there are significant differences between FBs and NFBs of WAFI in the use of strategic controlling tools. Significant differences were confirmed in the use of most strategic controlling tools, which are more widely applied in NFBs. These are the analysis of opportunities and threats, the analysis of the industry and competition, the attractiveness of the industry, the analysis of strategic groups in the industry, the life cycle curve of the industry, the SWOT analysis and the BSC. In addition to the above, the low tendency of the FBs to use strategic controlling tools is also related to the fact that the FBs are managed by family members, which means that the FBs lack institutionalized decision-making mechanisms and the owners or managers of these enterprises use more informal management mechanisms when making decisions (Calabrò & Mussolino, 2013; Kalmuenzer *et al.*, 2018a). As Allio (2004) states, insufficient strategic planning and succession planning can be defined as one of the causes of FB deaths. It is essential that FBs examine opportunities contrary to the family principles, goals, and strategic plans (Penney *et al.*, 2019). Strategic management supported by strategic controlling enabling the direction of activities to areas that are strategically important (Pavlák & Písař, 2020), plays a key role in the long-term sustainable development of the enterprise (Zhuravlyov *et al.*, 2019).

Continuous movement towards the company's strategic goals is ensured by operational controlling, through the development and achievement of specific operational goals set in accordance with the strategy (Dimov & Iliev, 2010). The essence of operational controlling lies in identifying deviations between real and planned values, which are analysed and subsequently measures are recommended to eliminate them (Foltínová & Dubcová, 2010). Therefore, adequate planning is crucial, without which the implementation of controlling is generally not possible (Horváth & Partners, 2021). FBs are predominant among small and medium-sized enterprises. As Klein (2000) and Hiebl (2013c) state, with the increasing size, the FBs fail, divide or otherwise transform into non-family corporations. Among enterprises with an annual turnover of more than EUR 500 million, the share of FBs falls to less than 30% (Klein, 2000). This statement is also supported by another aspect, which is the FB survival rate. Only 12% of all FBs reach to the third genera-

tion and only 3% reach to the fourth or subsequent generation (Allio, 2004; Hiebl, 2013c). It can be assumed that one of the causes of the FB deaths is, in addition to the above-mentioned insufficient strategic planning and succession planning (Allio, 2004), also insufficient operational planning (Hiebl, 2013c). As stated by Hiebl *et al.* (2013), Samuelsson *et al.* (2016) and Biel and Ślusarczyk (2022), FBs use less formal planning and significantly fewer planning tools than NFBs. This corresponds to the results on the basis of which the H2 hypothesis was accepted, assuming that there are significant differences in the use of operational controlling tools between FBs and NFB of WAFI. Significant differences were confirmed in the use of tools: planned profit and loss statement, calculation of planned costs and make or buy decisions. A notable but not significant difference was proven in the use of the short-term profit/loss calculation tool. The above-mentioned tools are used to a greater extent by NFBs.

The specifics of FBs such as ownership in the hands of the family, family involvement in business management, close relationship between managers and the family, striving for the long-term existence, specific goals, relevance of non-economic factors (socio-emotional wealth) can be identified as key factors influencing decision-making and management (Prencipe *et al.*, 2014; Gomez-Mejia *et al.*, 2014; Steier *et al.*, 2015; Kallmuenzer *et al.*, 2018; Metsola & Kuivalainen, 2021). Available studies suggest that FB's approach to cost controlling activities and tools is significantly different from NFB (Duréndez *et al.*, 2011; Samuelsson *et al.*, 2016). As Hiebl *et al.* (2013) and Carrera (2017) claim, the influence of the family generally has a negative impact on the application and institutionalization of cost controlling activities and tools. Research shows that small and medium-sized FBs consider cost controlling activities and tools to be less relevant than small and medium-sized NFBs (Duréndez *et al.*, 2011). They generally use fewer cost controlling tools (Feldbauer-Durstmüller *et al.*, 2012; Senftlechner & Hiebl, 2015; Songini *et al.*, 2018) and also tend to use less sophisticated tools (Neubauer *et al.*, 2012; Samuelsson *et al.*, 2016). This is in line with the results on the basis of which the H3 hypothesis was accepted, which assumes that there are significant differences in the use of cost controlling tools between FBs and NFBs of WAFI. In this field, there were the most significant differences in the application of tools out of all examined subsystems. These were reflected in the use of budgeting, price calculations based on full costs, process calculation, cost analysis, calculation of variable costs, which together with budgeting showed the most significant difference and in the use of monitoring of the

cover contribution. Inadequate use of cost controlling tools implies that FB managers may lack important information about current risks or underperformance in certain business areas, as well as about well-functioning business areas (Hiebl, 2013c). It is essential that FBs apply cost controlling, as it is one of the most important stages of the analysis that management uses in the operational as well as strategic management and is one of the most important operational management tools (Foltínová *et al.,* 2010). As Songini and Gnan (2015) and Einhorn *et al.* (2021) state, based on the research, the application of controlling systems in the area of costs significantly affects the performance of FBs.

Authors Di Giuli *et al.* (2011), Senftlechner and Hiebl (2015) and Hiebl *et al.* (2019) claim that FBs use fewer and also less sophisticated formal financial activities or tools and accounting procedures compared to NFBs, especially those with a higher family influence. Based on the above statements, the H4 hypothesis was formulated, which assumes that there are significant differences in the use of financial controlling tools between FBs and NFBs of WAFI. The results of the research confirmed the assumption made in this hypothesis. Significant differences were confirmed in the use of indicators of activity, indebtedness, market value, operational indicators as well as in the application of financial controlling. The frequently stated reason is that FBs are not managed professionally as in case of NFBs (Hiebl & Mayrleitner, 2019; Hiebl *et al.,* 2019). Giovannoni *et al.* (2011) and Stergiou *et al.* (2013) report that controllers or financial managers who are not family members can make a decisive contribution to the professionalization of controlling. A higher proportion of non-family managers in FB management positively correlates with the use, formalization and professionalization of controlling (Brück *et al.* 2018). This is also related to the aforementioned different approach of the FBs to non-financial and financial goals. FBs are driven mainly by non-financial objectives, behaving in accordance with values (Herrera & De Las Heras-Rosas, 2020) with a view to long-term sustainability (Siebels & zu Knyphausen-Aufsess, 2012; Schmid *et al.,* 2014; Parada & Gimeno, 2016). The socio-emotional wealth is also defined by some authors as the affective integration of the family into the business, as the emotional value perceived by family owners, which comes from the overlap between the family and the business (Zellweger & Astrakhan, 2008; Cruz *et al*., 2012; Chang & Mubarik, 2021). As Gottardo & Moisello (2017) state, such behaviour, i.e. an excessive focus on non-financial goals, can be detrimental to the financial health of the FBs. Concentration on more rational decision support systems based on eco-

nomic parameters can protect FBs from too much focusing on non-financial indicators, and thus from incorrect assessment of economic reality (Jakobsen, 2017).

FBs generally have a greater risk aversion than NFBs (Hiebl, 2013a; Dielenman, 2019). They are characterized as businesses undertaking lower levels of risk (Hiebl *et al.,* 2019). They achieve lower debt levels (González *et al.,* 2013; Hiebl *et al.,* 2019; Ntoung *et al.,* 2020), are internationalized more cautiously (Mitter & Emprechtinger, 2016), and are less willing to invest in projects with unknown results, such as research and development (Anderson *et al.,* 2012). As stated by Duran *et al*. (2016), FBs are often portrayed as an important but conservative form of business that is reluctant to invest in innovation. At the same time, however, it turns out that FBs are doing well and, in fact, represent many of the most innovative enterprises in the world (Rondi *et al.,* 2019). Duran *et al.* (2016), based on the study, argue that FBs, due to the high level of family control over the enterprise, concentration of wealth and the importance of non-financial goals, invest less in innovation, on the other hand, they have an increased rate of conversion of innovative inputs into outputs and, ultimately, a higher rate of innovation than NFBs. This corresponds to the results of the research, on the basis of which the H5 hypothesis was accepted, assuming the existence of significant differences in the use of investment controlling tools between FBs and NFBs of WAFI. Significant differences were proven in use of dynamic investment controlling tool, specifically net present value. These are applied to a greater extent by the FBs (in contrast to the tools of the previous subsystems mentioned above). As far as other dynamic tools are concerned, these are also applied to a greater extent by FBs and, in the case of static tools, they are applied to a greater extent by NFBs (however, significant differences could not be confirmed). Investment decision-making is one of the basic components of business performance management (Ojurović *et al.,* 2013). It is essential that the FBs use investment controlling tools, whose task is to provide an information service for investment decision-making and management of the entire investment process (Scholleová, 2009).

Based on the statements of the authors Danes *et al.* (2008) and Tan *et al.* (2015) stating that FBs show a lower tendency in the application of TQM compared to NFBs, hypothesis H6 was formulated about the existence of significant differences in the use of quality controlling tools between FBs and NFBs in the industries in question. FBs generally adopt the TQM philosophy only slowly due to the specifics of FB, especially centralization of manage-

ment and low professionalization of management (Danes *et al.,* 2008; Tan *et al.,* 2015). The achieved results showed compliance with the above statements, on the basis of which the H6 hypothesis could be accepted. Significant differences were manifested in the use of prevention cost monitoring (PAF model), internal error cost monitoring (PAF model) and the use of process performance measurement using deviations, whereas the tools are used to a greater extent by NFBs. TQM represents a fundamental shift in the way of management. It is a management philosophy that aims to increase the performance of businesses. Better performance is the way for FBs to pass wealth and business from generation to generation, i.e. the way to sustainability (Tan *et al.,* 2015). Proper management of TQM procedures towards achieving organizational performance of FB is essential to increase performance and gain a competitive advantage (Tan, 2013; Alhih *et al*., 2020). In addition, TQM represents a driver to internationalize (Floris *et al.,* 2022). Since the highest performance levels of enterprises are associated with the adoption of TQM (Tan *et al.,* 2015; Alhih *et al*., 2020), it is necessary for FBs to introduce the TQM philosophy together with quality controlling as a supporting quality management tool aimed at optimizing quality costs, increasing quality of processes and thus customer satisfaction (Wildemann, 2000).

Human resources are crucial for every organization. Emphasis on the importance of human capital and its capabilities through a human resource management strategy contributes to the growth and development of the enterprise (Knezović *et al.,* 2018; Ramadani *et al.,* 2020). FBs apply HRM practices differently compared to NFBs (Pittino & Visintin, 2013; Sánchez-Marín *et al*., 2019; Stavrou, 2021) and in general tend to pay less attention to the area of human resource management (HRM) (Hoon *et al*., 2019). Based on the above statements, the H7 hypothesis was formulated, which assumes that there are significant differences in the use of personnel controlling tools between FBs and NFBs of WAFI. This hypothesis was accepted based on the results of research that showed significant differences in the use of personnel indicators and their monitoring in the field of costs and remuneration, training and education, and personnel management. These tools are again applied to a greater extent by NFBs. FBs are characterized by low professionalization of management (Hiebl & Mayrleitner, 2019; Hiebl *et al.,* 2019). A frequent problem is also the preferential employment of an unqualified family member instead of an external expert (nepotism) (Ramadani & Hoy, 2015; Ramadani *et al.,* 2020). Since HRM deals with human capital, which is a valuable and rare asset of the company, the decrease of the role of HRM in FBs

has a negative impact on the business performance (Knezović *et al.,* 2020). It is necessary for FBs to apply human resource development procedures. They should work on every aspect of HRM, such as structured education opportunities or work-related development programs (Hoon *et al.,* 2019). In this way, FBs can consolidate positive, long-term performance and credibility, as well as attractiveness as an employer (Ramadani *et al.,* 2020). It should be noted that the effectiveness of HRM can be achieved through personnel controlling, which allows to reveal the weaknesses and strengths of human resource management and to find reserves for increasing the performance and competitiveness of the company (Foltínová, 2013).

The phenomenon of controlling is a very topical and discussed topic. The complexity of current business is constantly increasing, and thus the requirements for decision support (Laval, 2018). The decision-making process is increasingly important, especially in conditions of market imbalances and economic downturn, which are increasingly common in both the domestic and global markets (Grzegorzewska & Wieckowska, 2017). 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 (Bieńkowska & Zgrzywa-Ziemak, 2014; Todorović-Dudić *et al.,* 2017; Písař & Bílková, 2019; Csikósová *et al.,* 2022). Enterprises using controlling achieve higher economic activity and stability (Písař & Bílková, 2019). Many researchers also confirm the importance of the application of controlling tools for FBs (Hiebl, 2013b; Mitter, 2014; Duréndez *et al.,* 2016; El Masri *et al.,* 2017; Ruiz-Palomo *et al.,* 2019; Hiebl, 2021; Sedliačiková *et al.,* 2022; Poláková *et al.,* 2023). Controlling as an effective tool for active management of the future, the essence of which lies in supporting managerial decisions, is gaining more and more importance (Sedliačiková *et al.,* 2012; 2021a; 2022).

Conclusions

The aim of the paper was to identify significant differences in the application of tools of individual controlling subsystems between FBs and NFBs operating in the WAFI in Slovakia on the basis of a comprehensive mapping of the utilization of controlling tools in the businesses in question. A total of 363 Slovak WAFI enterprises participated in the survey. Out of these enterprises, 252 were identified as FBs and 111 as NFBs. FBs are char-

acterized by their specifics, which significantly distinguish them from NFBs. The specifics of FBs such as ownership in the hands of the family, family involvement in business management, close relationship between managers and the family, striving for the long-term existence of the company, specific goals, the relevance of non-economic factors (socio-emotional wealth) affect the way of management and thus the decision-making process. FBs are expected to use controlling to a lesser extent and differently compared to NFBs. The results have showed the existence of significant differences in the use of tools of all examined controlling subsystems, i.e. strategic, operational, cost, financial, investment, quality controlling as well as personnel controlling. Tools for which a significant difference in use between FBs and NFBs of the industries in question was confirmed were, with the exception of investment controlling tools, applied to a greater extent in NP. Significant differences in the use of investment controlling tools showed an opposite trend, i.e. these are used to a greater extent by FBs. The paper provides a view at the situation of the application of tools of individual subsystems of controlling in FBs and NFBs of WAFI. Based on the results of the research, it can be stated that the application of controlling tools in the FBs is significantly different from that in the NFBs. It can also be observed that FBs of WAFI tend to use controlling in an insufficient way and to a lesser extent compared to NFBs.

For the success of FBs operating in WAFI, it is recommended to implement modern management methods such as controlling. The 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 examining the differences in the applied strategy, or the method of implementing controlling in the enterprise between the FBs and NFBs operating in WAFI, as well as the reasons for the insufficient application of controlling in the FBs of WAFI. The issue of controlling, which was the subject of research in the woodworking and furniture industry in Slovakia in the context of a family businesses, was a scientifically unexplored area until now, what indicates the uniqueness of the achieved results presented in the paper and represents the expansion and deepening of the theoretical knowledge and the empirical base.

The scientific as well as practical contribution of the article is the approximation of a comprehensive view of the level of application of individual controlling tools in family and non-family enterprises in WAFI, in-

cluding the identification of significant differences in the use of individual controlling tools and presentation of the possibilities of their application.

The main limitation of the research is that the obtained results are presented in general for woodworking and furniture enterprises operating only in Slovakia. As it is a pioneering body of research in this field, it is the one-country research where factors (size of the company, number of employees, length of business activity on the market and number of generational changes, etc.) which could affect the achieved results, were not taken into account. Further scientific research should be focused on the aforementioned limitations. In the future, it will also be appropriate to compare the use of controlling tools between FBs and NFBs of WAFI in several transition economies, e.g. in the Visegrad Four countries. The next direction of research should be oriented to the investigation of correlations between the specifics of FBs and the application of controlling, as well as to more detailed research on the issue of the implementation of controlling in FBs, taking into account their specificities.

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Annex

Table 1. Two sample z-test of the H1 hypothesis

Strategic Controlling Tools	f_{FB}	N_{FB}	f_{NFB}	N_{NFB}	z-test	p-level
Opportunity and threat analysis	7.54%	252	15.32%	111	2.28	0.000
Industry and Competition Analysis	9.92%	252	17.12%	111	1.94	0.000
Attractiveness of the industry	4.76%	252	13.51%	111	2.93	0.000
Porter's model	1.19%	252	0.00%	111	1.15	0.249
Analysis of strategic groups in the industry	1.19%	252	10.81%	111	4.24	0.000
Industry Lifecycle Curve	0.40%	252	5.41%	111	3.2	0.000
Analysis of the age structure of the portfolio	3.97%	252	0.90%	111	1.57	0.116
SWOT analysis	5.56 %	252	13.51%	111	2.57	0.010
Experiential cost curve	5.56 %	252	10.81%	111	1,79	0.074
9-pole matrix	1.19 %	252	0.00%	111	1.15	0.249
BCG	1.59 %	252	0.00%	111	1.34	0.182
Benchmarking	2.38 %	252	6.31%	111	1.86	0.063
GAP Analysis	1.59 %	252	4.50%	111	1.64	0.101
BSC	1.19 %	252	5.41%	111	2.38	0.017

Table 2. Two sample z-test of the H2 hypothesis

Operational Controlling Tools	f_{FB}	N_{FB}	f_{NFB}	N_{NFB}	z-test	p-level
Income and cos plan	12.30 %	252	18.02 %	111	1.44	0.149
Planned Profit and Loss Statement	11.90 %	252	23.42%	111	2.80	0.005
Planned balance sheet	3.97 %	252	3.60 %	111	0.17	0.866
Planned costs calculation	9.52 %	252	20.72 %	111	2.93	0.003
Short-term profit/loss calculation	7.94 %	252	14.41 %	111	1.90	0.057
Cash Flow Plan	9.52 %	252	14.41 %	111	1.37	0.170
ABC analysis	2.38 %	252	4.50 %	111	1.09	0.278
Critical Point Analysis	2.38 %	252	4.50 %	111	1.09	0.278
Value engineering	2.38 %	252	2.70 %	111	0.18	0.857
Make or buy decisions	0.40 %	252	8.11 %	111	4.13	0.000

Table 3. Two sample z-test of the H3 hypothesis

Cost controlling tools	f_{FB}	N_{FB}	f_{NFB}	N_{NFB}	z-test	p-level
Budgeting	5.56%	252	17.12%	111	3.53	0.000
Price calculations (full costs)	14.29%	252	23.42%	111	2.13	0.033
Target costing	5.16%	252	6.31%	111	0.44	0.659
Process calculation	1.59%	252	5.41%	111	2.05	0.041
Cost analysis	4.76%	252	10.81%	111	2.14	0.033
Variable costs calculation	1.19%	252	8.11%	111	3.4	0.000
Cost indicators	8.33%	252	5.41%	111	0.98	0.329
Monitoring of Cover Contribution	1.59%	252	9.01%	111	3.38	0.001

Table 4. Two sample z-test of the H4 hypothesis

Financial Controlling Tools	f_{FB}	N_{FB}	f_{NFB}	N_{NFB}	z-test	p-level
Liquidity indicators	6.35%	252	10.81%	111	1.47	0.142
Profitability indicators	8.33 %	252	9.00%	111	0.21	0.833
Activity indicators	3.57%	252	10.81%	111	2.72	0.007
Indebtedness indicators	6.75%	252	15.32%	111	2.58	0.010
Cash flow indicators	10.32%	252	13.51%	111	0.88	0.376
Market value indicators	2.38 %	252	9.00%	111	2.83	0.005
Operational indicators	7.94 %	252	15.32%	111	2.14	0.032
Rapid test	1.59 %	252	0.90%	111	0.52	0.604
Creditworthiness index	1.19%	252	0.00%	111	1.15	0.249
Aspect global rating	0.40%	252	0.00%	111	0.67	0.505
Altman Z-score	1.19%	252	0.00%	111	1.15	0.249
EVA	1.59 %	252	0.00%	111	1.34	0.182
MVA	1.19%	252	1.80%	111	0.46	0.646
CVA	1.19%	252	1.80%	111	0.46	0.646
RONA	1.19%	252	0.00%	111	1.15	0.249
CFROI	3.57%	252	2.70%	111	0.43	0.669
Financial Planning	7.14%	252	10.81%	111	1.17	0.242
Working Capital Controlling	6.75%	252	11.71%	111	1.58	0.114
Continuous Liquidity Controlling	2.38 %	252	3.60%	111	0.65	0.513
Controlling of short-term liquidity deficits and surpluses	1.59 %	252	0.90%	111	0.52	0.604
Financial control	2.38 %	252	9.00%	111	2.83	0.005

Table 5. Two sample z-test of the H5 hypothesis

Investment Controlling Tools	f_{FB}	N_{FB}	f_{NFB}	N_{NFB}	z-test	p-level
Cost comparison	6.75%	252	9.91%	111	1.04	0.299
Profit comparison	5.95%	252	10.81%	111	1.63	0.104
Profitability comparison	7.14%	252	8.12%	111	0.33	0.743
Payback period	10.71%	252	18.02 %	111	1.91	0.056
Net present value	3.97%	252	0.00%	111	2.13	0.033
Internal rate of return	2.78%	252	2.70%	111	0.04	0.966
Modified Internal rate of return	0.40%	252	0.00%	111	0.67	0.505
Maturity	2.78%	252	0.00%	111	1.77	0.076
Profitability index	2.38 %	252	0.00%	111	1.64	0.101
Final value method	1.98%	252	0.90%	111	0.74	0.457

Table 6. Two sample z-test of the H6 hypothesis

Quality controlling tools	f_{FB}	N_{FB}	f_{NFB}	N_{NFB}	z-test	p-level
Prevention costs	2.78%	252	8.12%	111	2.28	0.023
Evaluation cost	4.76%	252	5.41 %	111	0.26	0.793
The cost of internal errors	3.97%	252	11.71%	111	2.79	0.005
The cost of external errors	2.78%	252	5.41 %	111	1.24	0.214
Deviation Process Performance	2.78%	252	13.51%	111	3.95	0.000
Satisfaction index	5.16%	252	3.60%	111	0.65	0.517
Six Sigma	3.17%	252	0.90%	111	1.28	0.200
EFQM	1.19%	252	0.00%	111	1.15	0.249
COPQ	1.19%	252	2.70%	111	1.04	0.298
Non-conformity Compliance Costs	1.19%	252	0.90%	111	0.24	0.807
Lifecycle cost model	1.19%	252	0.90%	111	0.24	0.807

Table 7. Two sample z-test of the H7 hypothesis

Personnel Controlling Tools	f_{FB}	N_{FB}	f_{NFB}	N_{NFB}	z-test	p-level
Area of cost and remuneration	12.69%	252	20.72%	111	1.97	0.049
Recruitment and Planning Area	3.97%	252	3.60%	111	0.17	0.866
Training and education area	2.78%	252	10.81%	111	3.16	0.002
Area of motivation, satisfaction	6.35%	252	5.41%	111	0.35	0.730
Personnel management area	2.38%	252	9.01%	111	2.84	0.005

Appendix

Questionnaire

Dear respondent,
We kindly ask you to fill in a short questionnaire, which focuses on the use of controlling and its tools in the family and non-family businesses in wood-working and furniture industry.

Controlling as an effective tool for active management of the business's future is primarily aimed at supporting managerial decisions. The main task of controlling is the analysis of the past with respect to the future, focusing on the forecast of future development and subsequent proposal of measures for the future business development.

The answers you provide are fully anonymous and will be used as summary results for all the addressed companies, in order to create a proposal for a framework concept of controlling as well as an implementation method, which can also help your company to increase its competitiveness, performance, financial health and ultimately sustainability.

Thank you in advance for completing the questionnaire.

1. Your position in the enterprise is:
   - Owner
   - CEO
   - Manager/director of a department
   - Employee
   - Owner and CEO at the same time
   - Owner and director/manager of a department
   - Other.....

Identification data

2. The enterprise is:
   - Manufacturing - producing products (tick this option also if the enterprise provides services in addition to producing products)
   - Non-manufacturing - providing services

3. Regarding the size of the enterprise, it is classified as:
   - Micro enterprise (up to 10 employees)
   - Small enterprise (10-49 employees)
   - Medium-sized enterprise (50-249 employees)
   - Large enterprise (250 or more employees)

4. At what level does the enterprise operate?
Multiple options can be ticked.
   - Local
   - Municipal
   - Regional
   - National
   - International

5. How long has the enterprise been on the market?

- less than 1 year
- 1 - 5 years
- 6 - 15 years
- 16 - 25 years
- 26 and more

6. The enterprise belongs to the following category according to the SK NACE classification of economic activities:

- Wood processing and manufacture of wood and cork products (C16)
- Manufacture of furniture (C31)
- Other.....

Controlling implementation

7. Which of the following activities do you perform in your enterprise?
Multiple options can be indicated

- Developing a strategic plan for a time horizon of 3,5 or more years
- Setting goals in a written form and regularly evaluating their achievement
- Breaking down costs into fixed and variable (economic/value management)
- Regular calculation of the short-term economic result
- Calculation of cover contributions (contributions to fixed costs and profit) and their different variations
- Critical point calculation (Break Even Analysis)
- Monitoring of deviations from the plan on the basis of a flexible budget
- Established profit centers
- None of the above
- Other ...

8. Please indicate which of the listed systems you have established in your enterprise:
Multiple choices can be indicated

- Planning system aimed at a time horizon of more than 1 year
- Budgeting system based on synthetic and analytical accounts, considering fixed and variable costs
- Management accounting system enabling the plan to be monitored on a unit-by-unit basis
- Standardized reporting system
- Forecasts/estimates - future outlook
- Uniform flexible planning system
- None of the above systems
- Other ....

9. In your opinion, do psychological aspects (related to motivation, communication, feedback, building trust in a particular tool, but also in the controller and the way of enforcing changes and preparing for that tool) play a key role in the effective implementation and functionality of controlling?

- Yes
- No

10. Which of the following strategies/practices have been performed or is being performed as part of the implementation of controlling into the enterprise?

- Concurrent strategy - the implementation of controlling runs concurrently with the previously established procedures and processes, when employee training, testing and final adjustments to the controlling system take place
- Pilot strategy - introduction of the controlling system into only one area of management, when the system is tested and then introduced to the whole enterprise
- Gradual strategy - gradual replacement of the old / original system with a new controlling system
- Shock strategy - termination of the original system and subsequent launch of the new controlling system
- Implementation of controlling in the enterprise has not been / is not being carried out
- Other ...

11. Do you think that developing a framework concept for controlling as well as how to implement it can help your company improve its competitiveness, performance, financial health and, consequently, sustainability?

- Yes
- No

12. Is controlling implemented in the enterprise?

- Yes
- We are planning in the short term (up to 3 years)
- We are planning in the long term (more than 3 years)
- No

Controlling and its tools

13. Strategic controlling tools?

- Analysis of opportunities and threats
- Industry and competitiveness analysis
- Industry attractiveness
- Porter's five competitive forces model (competitive environment analysis)
- Analysis of strategic groups in the industry
- Industry life cycle curve
- Portfolio age structure analysis
- SWOT analysis (analysis of strengths, weaknesses, opportunities and threats)
- Experience cost curve (relationship between production volume and unit costs)
- Nine Fields Matrix / Customer Portfolio Matrix (customer portfolio assessment)
- BCG matrix (resource planning for different products according to the company's competitiveness and business growth rate)
- Benchmarking (the process of comparing and measuring process performance against peers in selected leading organizations)
- GAP analysis
- Balanced Scorecard / BSC (system of balanced scorecard indicators of business performance)
- Other ...

14. Operational controlling tools?

- Revenue and cost plan
- Projected income statement
- Projected balance sheet
- Calculation of projected costs
- Calculation of short-term profit or loss
- Cash Flow Plan
- ABC analysis (manufacturing inventory analysis)
- Critical point analysis / break-even point analysis (determining the point at which sales begin to exceed total costs)
- Value analysis (method of detecting and eliminating unnecessary costs)
- Make or buy decisions
- Othe...

15. Cost controlling tools?

- Budgeting
- Pricing based on full costs
- Target costing / demand-driven costing
- Process ABC / Activity Based Costing (sub-activity costing method)
- Cost analysis (1st and 2nd stage)
- Costing based on projected incomplete costing
- Costing indicators
- Tracking of cover allowance
- Other ...

16. Financial controlling tools?
    - Liquidity indicators,
    - Profitability indicators,
    - Activity indicators,
    - Debt indicators,
    - Cash flow indicators
    - Market value indicators
    - Operational indicators
    - Quick test,
    - Creditworthiness Index
    - IN indices (trust indices from Neumaier)
    - Aspect global rating
    - Altman Z-score
    - Economic Value Added / EVA
    - Market Value Added / MVA
    - Cash Value Added / CVA
    - Shareholder Value Added / SVA
    - Return on net assets / RONA
    - Cash flow return on investment / CFROI
    - Financial planning
    - Working capital controlling (inventories, receivables)
    - Ongoing liquidity controlling
    - Controlling of short-term liquidity deficits and surpluses
    - Financial control and proposal of measures
    - Other...

17. Investment controlling tools?
    - Cost comparison
    - Profit comparison
    - Profitability comparison
    - Payback period
    - Net present value
    - Internal rate of return
    - Modified internal rate of return
    - Discounted payback period
    - Profitability index
    - Final project value method
    - Other...
18. Quality controlling tools?
    - Tracing the cost of prevention (PAF model)
    - Tracking the cost of evaluation (PAF model)
    - Tracking the cost of internal errors (PAF model)
    - Tracking the cost of external errors (PAF model)
    - Measuring process performance using deviations
    - Measuring process performance using satisfaction index
    - Measuring process performance using Six Sigma (identifying and eliminating causes of errors and minimizing variability in manufacturing and business processes)
    - Measuring process performance using EFQM (Excellence Model)
    - Process performance measurement using COPQ (cost of quality reduction)
    - Measuring process performance using the process cost model (cost of conformity, cost of non-conformity)
    - Measuring process performance using the life cycle cost model
    - Other ...

19. Personnel controlling tools?
- HR indicators and their monitoring in the area of personnel costs and remuneration
- HR indicators and their monitoring in the area of recruitment and personnel planning
- HR indicators and their monitoring in the area of training and education
- HR indicators and their monitoring in the area of motivation and job satisfaction
- HR indicators and their monitoring in the area of HR management
- Other...

20. Do you have a separate controlling department in your company?
- Yes
- No
- It is organizationally integrated in an existing department
- Other.....

Identification data – family businesses

21. Does the enterprise meet any of the following characteristics of a family business? Please indicate which one:
The first 3 attributes apply to trading companies, the first 2 attributes apply to cooperatives, the 4th attribute applies to natural persons - entrepreneurs. The 5th character applies to companies and cooperatives.
If the enterprise meets more than one character, indicate only one of them.
- At least two members of the family directly or indirectly exercise a majority of the voting rights and at least one member of the family is a statutory body or a member thereof.
- At least two members of the family benefit economically from the business by a total of more than 50% of the after-tax profits.
- One family member is the sole partner or sole shareholder and also the statutory body or a member thereof, and at least one other family member is the statutory body or a member thereof, a proxy, a member of the supervisory board or has an employment relationship with the business.
- At least one member of the family has an employment relationship with the natural person - entrepreneur.
- If the external investor has an increased involvement in the business at the expense of family members to protect its investment, the business meets the second characteristic if the investor's influence is limited to a certain period of time.
- Does not meet any of the above characteristics.

Family businesses

22. Which of the following attributes characterize your family business?
Multiple choices can be indicated.
- Connecting family and work/company life
- Long-term growth and sustainability goals, and responsible ownership
- Tradition
- Family brand
- Long-term relationships, reputation
- Informality
- Trust
- Participation, commitment and personal interest in the growth of the business
- Easier decision-making process, greater flexibility in decision-making
- Focus on customer, employee and local community satisfaction
- Strong sense of social responsibility
- Values-based and emotional management style
- Employee loyalty
- Greater sense of long-term commitment to employees
- High innovation potential