

# The comparison of RBV-based competitiveness of Hungarian family-owned and non-family-owned SMEs

Hungarian

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## Abstract

**Purpose** – The purpose of this paper is to identify the differences between Hungarian family-owned businesses (FOBs) and non-family-owned businesses (NFOBs) concerning the elements of SME competitiveness and financial performance.

**Design/methodology/approach** – The research covers the Hungarian data set of the Global Competitiveness Project (GCP, [www.sme-gcp.org](http://www.sme-gcp.org)) of 738 (data collection between 2018 and 2020) non-listed SMEs, of which 328 were FOBs. The study uses the comprehensive, multidimensional competitiveness measurement of the GCP built on the resource-based view (RBV) and the configuration theory. Financial performance was captured with two composite indicators: short-term and long-term financial performance (LTFP). The comparative analysis between FOBs and NFOBs was conducted using binary logistic regression.

**Findings** – The results show that FOBs are more prone to focusing on local niche markets with higher longevity and LTFP than NFOBs. However, FOBs have lower innovation intensity and less organised administrative procedures. The most contradicting finding is that the FOBs' higher LTFP is accompanied by significantly lower competitiveness than in the case of NFOBs.

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**Originality/value** – This study goes beyond other GCP studies by including composite financial performance measures among the variables examined. The combination of performance-causing (resources and capabilities) and performance-representing (financial performance) variables provides a better understanding of the non-listed SMEs in terms of family ownership. The results help academia to enrich the RBV-competitiveness, the non-listed SME management and finance literature, and policymakers to design business development and support schemes. They also show future entrepreneurs the impact of family ownership on entrepreneurial success.

**Keywords** SMEs, Family businesses, RBV-based competitiveness, Global Competitiveness Project, Financial performance

**Paper type** Research paper

## 1. Introduction

Creating competitiveness and ensuring a competitive advantage is central to the long-term survival and growth of businesses, and as a result, the field is also very popular among researchers. Moreover, it is not clear which specific internal resources and capabilities related to economic competition should be captured and by what method. Over the past decades, the resource-based view (RBV) framework has become one of the most influential approaches in business research (Wernerfelt, 1984; Prahalad and Hamel, 1990; Peteraf, 1993; Barney, 1991; Barney, 2001; Rugman and Verbeke, 2002). According to the RBV, differences in performance among industry players can be explained by the heterogeneous and immobile resources firms acquire, possess, exploit and use. Some researchers have examined the separate factors of competitiveness based on the RBV, while others (including the researchers of Global Competitiveness Project; GCP) argue for the construction of composite RBV indices. Composite competitiveness approaches have the advantage of enabling a systemic analysis of competitiveness factors, as suggested by Miller (1986, 1996). This study captures SME competitiveness by the following characteristics and interrelated internal resources and capabilities: human capital, products, domestic market, networking, technology, decision-making, strategy, marketing, internationalisation and online presence. The combination of these resources and capabilities allows the SME to compete effectively with other businesses and provide high-value products/services to consumers.

The number and share of family businesses within the SMEs (like in the data set of Hungary) are traditionally significant (De Massis *et al.*, 2018), and their contribution to employment and GDP growth is noteworthy (Villalonga and Amit, 2006; Martinez and Aldrich, 2014). The literature has identified significant differences in the operation of family-owned businesses (FOBs) and non-family-owned businesses (NFOBs) (Denison *et al.*, 2004; Donckels and Fröhlich, 1991). Comparative studies focusing on specific competitiveness factors have separately examined these two groups of firms (e.g. Villalonga and Amit, 2006; Kidwell *et al.*, 2018). Numerous studies demonstrate that FOBs outperform NFOBs (e.g. Sharma *et al.*, 1997; Denison *et al.*, 2004; Miller *et al.*, 2007; Hair *et al.*, 2010; Poza and Daugherty, 2014) and exhibit higher growth rates, supporting the long-term perspective of FOBs (Miroshnychenko *et al.*, 2020). However, other studies conclude that the positive effect of family leadership on corporate performance cannot be clearly stated (e.g. Pindado and Requejo, 2015; Sari *et al.*, 2019). From the literature, it is evident that FOBs are less likely to have formalised HRM routines (e.g. recruitment, selection, compensation) in their operations (Kidwell *et al.*, 2018). Family members exhibit a high level of commitment and identification with the firm, prioritising long-term considerations due to their integrity, while non-family members focus on the return on their invested values (Leopizzi *et al.*, 2021). FOBs generally invest less capital in R&D activities compared to NFOBs, often due to the owners' lower risk appetite (Villalonga and Amit, 2006; De Massis *et al.*, 2013). However, according to Covin *et al.* (2016), no differences exist between FOBs and NFOBs in terms of resources and capabilities for creating radical innovations.

A general comparison of the competitiveness of FOBs and NFOBs would be essential to identify the key differences between the two groups, hence previous studies have mainly focused on the competitiveness of FOBs only (e.g. Leenders and Waarts, 2003; Moreno-Gómez and Lafuente, 2019; Vélez-Bedoya *et al.*, 2021). On the other hand, these studies mostly examined listed companies as their archival financial data are accessible (Poza and Daugherty, 2014; Carney *et al.*, 2015). The contradictory results clearly indicate that further research is needed to understand the specific strengths and weaknesses of FOBs, especially among the non-listed SMEs that form the backbone of the business ecosystem. This study responds to this call because these results form its basis of motivation and starting point. In addition, this paper also considers the call of Dvouletý and Blažková (2021), who suggest the application of the GCP for the research of a more complex operationalisation of firm competitiveness. In the mainstream of the family business literature also referred in the result-based discussion of this paper, the majority of the researches focus on analysing the single modules of competitiveness and not considering the interactions between the complex set of simultaneously impacting resources and capabilities. Therefore, this paper applies the complex methodology of GCP to identify FOB SMEs' pure effects and peculiarities.

*The study aims to identify the differences between FOBs and NFOBs in terms of the elements of RBV-based competitiveness and financial performance using the Hungarian data set of GCP, including 738 non-listed SMEs, to enrich the empirical literature in a significantly contradictory research field.*

To achieve this objective, the first step involves introducing and substantiating the competitiveness concept of GCP using relevant literature. The second step entails demonstrating the characteristics of family-owned SMEs through an extensive comparison of 328 Hungarian FOB and 410 NFOB non-listed SMEs. This comparison is based on 44 variables related to resources and capabilities, two composite indicators of financial performance and three additional variables (business age, firm size category and industry). In the third step, the empirically identified FOB peculiarities were examined based on the existing corresponding literature to evaluate the findings in light of previous studies.

This study exceeds the framework of the GCP studies (elaborated in subsection 2.2) by including complex financial performance in the factors examined. In this regard, the sample of GCP SMEs provides a solid foundation for investigation because all financial statements are publicly accessible in Hungary (Lippai-Makra *et al.*, 2022). This enables the use of archival financial accounting data rather than perceived data, distinguishing it from many other studies (e.g. Villalonga and Amit, 2006; Wong *et al.*, 2010; Miralles-Marcelo *et al.*, 2014; Miroshnychenko *et al.*, 2020). Additionally, the scope of the study extends to non-listed companies, which sets it apart from previous research efforts.

*The key contribution of the study is the complex and more complete GCP-based analysis of the main differences between non-listed FOB and NFOB SMEs in terms of profile, financial performance and competitive drivers.* As a result, it contributes to expanding the existing literature boundaries with a more complex and holistic approach.

The rest of the paper is organised as follows. Section 2 presents an overview of the existing literature on RBV-based competitiveness and the application of the GCP context. Section 3 describes the course of data collection, the data set and the methodology. Section 4 presents the empirical findings and the results-based literature discussion. Section 5 is the conclusion, which offers concluding remarks, implications, limitations and further research directions of the study.

## 2. Background literature

### 2.1 Resource-based view approach in SME competitiveness research

Competitiveness has already been examined by various means, both theoretically and empirically: product, business, corporate, industry, regional, national and supranational levels (Delgado *et al.*, 2012), and several literature-synthesising articles and meta-analyses (Buckley *et al.*, 1988; Chikán *et al.*, 2022) have also been published. Of these determinants, this paper focuses on firm-level competitiveness; their literature-based summary can be seen in Table 1.

The main components of competitiveness are examined below, based on multidimensional firm competitiveness studies:

- Businesses' offering products/services have been identified as the most crucial dimension of firm-level competitiveness in many empirical studies. Zahra and Covin (1993) found a relationship between corporate performance as measured by proportional return on sales and resources and capabilities related to technology and strategic orientation. Boyer and Lewis (2002) determined competitiveness based on four dimensions: product quality, cost efficiency, delivery and organisational flexibility. In their product competitiveness-based analysis, Fernhaber and Patel (2012) concluded that the depth and breadth of the product portfolio are related to market uncertainty and corporate performance (interpreted in terms of sales revenue, operating profit and the number of employees).
- The networking know-how (Julien and Ramangalahy, 2003; Kingsley and Malecki, 2004), the importance of employees' technical skills and training (Aral and Weill,

Literature	Specific factor name, whether it appears in the study or not [Yes ("✓") / No ("")]							
	Prod. <sup>1</sup>	Hum. <sup>2</sup>	Tech & ICT <sup>3</sup>	Str. <sup>4</sup>	Mark. <sup>5</sup>	DIM <sup>6</sup>	Netw. <sup>7</sup>	Org. <sup>8</sup>
O'Farrell <i>et al.</i> (1992)					✓	✓		✓
Zahra and Covin (1993)	✓		✓	✓	✓	✓		✓
Slevin and Covin (1995)	✓			✓	✓	✓	✓	✓
Lu and Beamish (2001)				✓		✓	✓	
Boyer and Lewis (2002)	✓		✓					✓
Demeter (2003)	✓		✓		✓			
Julien and Ramangalahy (2003)	✓	✓			✓	✓	✓	
Kingsley and Malecki (2004)	✓	✓				✓	✓	
Belderbos and Sleuwaegen (2005)			✓			✓		
Hult <i>et al.</i> (2007)		✓	✓			✓		✓
Aral and Weill (2007)		✓	✓					
Wu (2008)	✓			✓		✓	✓	
Gunasekaran <i>et al.</i> (2011)	✓	✓	✓		✓	✓	✓	✓
Fernhaber and Patel (2012)	✓					✓		
Wang and Wu (2012)	✓	✓	✓			✓		
Hansen <i>et al.</i> (2013)		✓		✓	✓	✓		✓
Santos-Vijande <i>et al.</i> (2013)	✓		✓	✓	✓	✓		
Subramanian <i>et al.</i> (2014)	✓				✓	✓		
Chuang and Huang (2015)	✓	✓	✓		✓	✓		✓

**Table 1.** Components of competitiveness based on the literature

**Notes:** Explanation of specific factors: 1 = product, product characteristics, product innovation; 2 = quality of human resources, human systems; 3 = production, technology, technological innovation, use of ICT tools, online presence; 4 = strategy, strategic orientation; 5 = marketing, marketing innovation; 6 = domestic and international markets, internationalisation, intensity of competition; 7 = networking, cooperation, partnership, alliances; 8 = decision-making, organisation, management

**Source:** Own elaboration

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2007; Chuang and Huang, 2015), organisational learning capabilities that include employee engagement (Hult *et al.*, 2007) and the importance of acquiring knowledge (Hansen *et al.*, 2013) are all significant elements of human resources and capabilities (Wright *et al.*, 2001) that are directly or indirectly contributing to the optimal use of other resources and capabilities.

- The resources and capabilities of operations and technology are also often part of empirical competitiveness analyses with separate indicators, where different researches showed that there is a positive relationship between competitiveness and the manufacturing strategy (Demeter, 2003); operations strategies, technology and globalisation (Gunasekaran *et al.*, 2011); and with start-up team member commitments (Wang and Wu, 2012). Also, it has been investigated with a complex approach, finding a positive relationship between the culture of competitiveness and knowledge development (e.g. Hult *et al.*, 2007).
- Due to the rapid growth of the internet and e-business and the steady decline in computing and communication costs, resources and capabilities related to information and communication technologies (ICTs) are becoming increasingly important (Fuchs and Kirchain, 2010; Chuang and Huang, 2015; Borgulya *et al.*, 2022). According to Aral and Weill (2007), the development of ICT resources and capabilities enhances the positive impact of ICT investments on corporate performance (interpreted based on ROA and profit margin).
- Empirical studies also investigate resources and capabilities related to marketing (e.g. Hansen *et al.*, 2013; Wernerfelt, 2013). Hansen *et al.* (2013) developed a competitiveness factor with five components of strategic and marketing resources and capabilities, and they found a positive relationship with the ownership value.
- Internationalisation can also be a tool for achieving competitiveness. Lu and Beamish (2001), Julien and Ramangalahy (2003) and Belderbos and Sleuwaegen (2005) examined the competitive impact of resources and capabilities related to export sales. In addition to the importance of selling in foreign markets, the development of knowledge-based resources and capabilities was also emphasised.
- Several studies identify networking as a factor of competitiveness. Kingsley and Malecki (2004) examined the business importance of formal and informal networks in terms of competitiveness. According to them, informal networks provide valuable information for product development, while formal networks are primarily important for export-oriented businesses. Julien and Ramangalahy (2003) demonstrated the role of formal networks in the development of export and strategic resources and capabilities and the increase of export performance.
- In SMEs, the entrepreneurs play a dominant role, one person is usually responsible for both ownership and managerial function, and the entrepreneur participates in the operation of all business functions and has full decision-making competency in most cases. Alvarez and Barney (2000) propose the inclusion of entrepreneurship (such management attributes as agility, creativity and fast decision-making) as an inimitable strategic tool in the RBV approach (Connor, 2002). So, the capabilities of the entrepreneur are one of the key aspects affecting an SME's competitiveness (Man *et al.*, 2002; Ong *et al.*, 2012).

According to these papers, *SME competitiveness is determined by the following characteristics and interrelated internal resources and capabilities: human capital, products, domestic market, networking, technology, decision-making, strategy, marketing, internationalisation and online*

*presence*. The combination of these resources and capabilities allows the SME to compete effectively with other businesses and provide high-value products/services to consumers.

It is also professionally supported to apply RBV approach when examining family firms, as it provides insights into their organisational behaviour, e.g. innovation activity and competitive advantages (Covin *et al.*, 2016; Gjergji *et al.*, 2019; Audretsch *et al.*, 2023), unique resources and organisational–human capital (Fang *et al.*, 2012) and the most valuable resources of family firms (Simon and Hitt, 2003).

## 2.2 Introduction of resource-based view -based SME competitiveness approach in the Global Competitiveness Project research

GCP developed the most holistic, complex and RBV-based SME competitiveness methodology according to the background literature.

In the GCP, more than 200 indicators were used to construct the 44 (typically composite) competitiveness variables (Figure 1, for more methodological details, see the cited GCP papers) that constitute the ten pillars (for the full list of variables, see Figure 1 and Appendix 1 Table A1).

In light of the above, the complex, RBV-based measurement methodology of SME resources and capabilities developed by GCP was used in the empirical part of the study, hence, it is embedded in the literature and is suitable for the analysis of SME competitiveness determinants as it can be evidenced from the prior GCP studies.

The RBV-based SME competitiveness methodology adapted and improved by GCP, was first introduced by Szerb *et al.* (2014). Since then, the GCP approach has been applied to the study of family firms (Moreno-Gómez and Lafuente, 2019), to non-parametric efficiency analysis (Lafuente and Vaillant, 2021), to the analysis of configurations of resources and capabilities (Lafuente *et al.*, 2020a; Lafuente *et al.*, 2020b), to analyse cross-variable correlations of competitiveness (Dvouletý and Blažková, 2021), to understand the peculiarities of SME digitalisation (Lányi *et al.*, 2021; Lafuente *et al.*, 2023), to research relationships of marketing strategies and competitiveness (Moreno-Gómez *et al.*, 2023), to the quantification of intellectual capital and the empirical analysis of innovation relationships (Rideg *et al.*, 2023), to the empirical analysis of RBV product innovation (Lukovszki *et al.*, 2021) and to evaluate the co-innovation trajectory of firms adopting different collaborative innovation networks (Lafuente *et al.*, 2023).

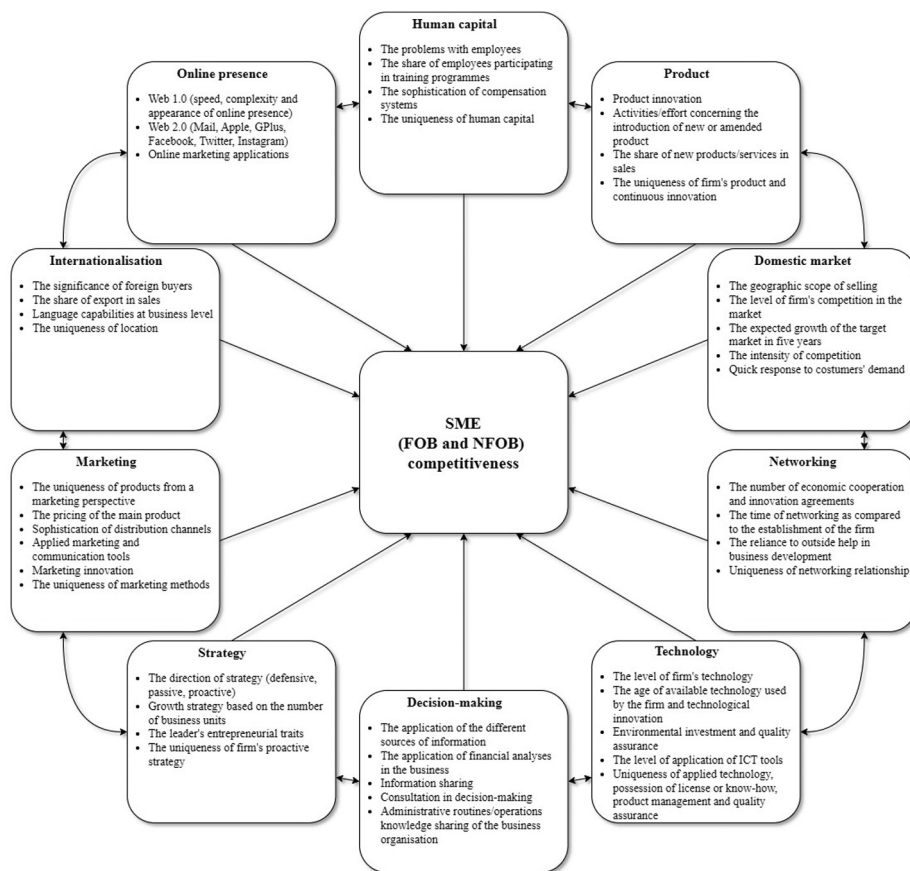
## 3. Methodology

### 3.1 Data collection process

The empirical investigation is based on the Hungarian SME data set of the GCP ([www.sme-gcp.org](http://www.sme-gcp.org)). A questionnaire was developed to measure the performance of SMEs' resources and capabilities. Extensive data collection campaigns were conducted with the participation of cooperating higher education institutions and a specialised market research service provider throughout Hungary.

The course of the survey was as follows: after an initial telephone call for approval, the face-to-face survey with personal support was carried out to one of the business owners. Similar to Irwin *et al.* (1998) and Douglas and Ryman (2003), the managers were asked to value the individual importance of a series of resources and capabilities along a five-point scale (see Priem and Butler, 2001). In the proposed Likert-type uniform quantification, the value of "0" indicates no strategic value (Douglas and Ryman, 2003), while the rest of the scale is evaluated from "1" (low relevance) to "4" (high relevance). This scale allows a sufficient differentiation in the valuation of the analysed variables (Lederer *et al.*, 2013).





**Figure 1.** Conceptual model of RBV-based SME competitiveness applied in GCP research

**Source:** Own elaboration

Overall, it is possible to obtain information for 44 variables (Lafuente *et al.*, 2020a; Lafuente *et al.*, 2020b) about each SME's resources and capabilities.

The questionnaire has been used relatively widely in Hungary for research purposes since 2013. The data received were cleaned using a rigorous methodology; only those observations remained where every variable contained non-missing values. Similarly, SMEs with less than five employees were excluded from the sample due to the GCP protocol, as neither such an SME-focused approach is capable of quantifying the internal factors in such a small business.

The data cleansing process yielded a final sample of 738 Hungarian businesses (surveyed between 2018 and 2020; data set date stamp 20/05/2020). The average business has 24 employees with 19 years of market experience. Also, the analysis of the sectoral composition of the final sample reveals that 29% of firms operate in raw material extraction sectors and industry, while the proportion of retailing and professional services businesses is 34% and 37%, respectively. Non-response bias was tested for early and late respondents in terms of business size (employees), business age and industry sectors. No significant differences were found.

### 3.2 Introduction of the data set

To analyse the RBV-based FOB and NFOB SME competitiveness in the GCP research, according to the applied conceptual model (Figure 1) in this study, four groups of variables were developed from the data:

- (1) Firstly, variables of resources and capabilities (see Appendix 1 Table A1) and the competitiveness index were formed from the survey data using the following six-step methodology:
  - (1) identifying variables and calculating values [0; 4];
  - (2) normalisation of variable values to the range [0; 1];
  - (3) calculation of pillar values by averaging given normalised variables [0; 1];
  - (4) normalisation of pillar values to the range [0; 1];
  - (5) adjusting the normalised pillar values to the common average of the pillar averages by increasing the values to the same  $k$ th power [0; 1]; and
  - (6) calculation of competitiveness points by summation of the adjusted pillar values [0; 10].

For the identification of the resources and capabilities of FOBs, step 2, while to show the overall characteristics, the composite competitiveness index (COMP index) of step 6 has been used.

- (2) Secondly, financial indicators were calculated from publicly accessible financial and accounting data. The financial performance was evaluated through the short- and long-term financial performance (LTFP) (Rauch *et al.*, 2009). Short-term financial performance (STFP) targets (in addition to liquidity preservation) are dividend and property value growth, which are measured indirectly using current-year data through efficiency and theoretical firm value change. The LTFP aims (with an acceptable level of indebtedness) are growth, measured using four years of data on turnover, operating profit, total assets and headcount, taking into account the stability of growth. The usual high variance of financial variables is addressed in the methodology by categorising the variable values. For details, see Table 2 below.
- (3) Thirdly, a FOB dummy was formed. To identify FOBs, the authors used the following criteria [based on the synthesis of Chua *et al.* (1999), Anderson and Reeb (2003), Sharma (2004), Poza and Daugherty (2014), Neubauer and Lank (2016)]: 1) the majority of ownership and/or decision-making rights (at least 51%) are held by the owner's family; 2) in addition to majority ownership, at least one family member actively participates in the management of the business. Using the Hungarian company database of OPTEN Ltd., the authors examined the ownership structure, the network of contacts and the family relationships (name, address, mother's name). Based on the above criteria, 44.4% of the investigated businesses are FOBs, and 55.6% are not NFOBs or have sole proprietorships.
- (4) Fourthly, other variables (firm size based on the number of employees, industry and business age) were selected for controlling purpose.

### 3.3 Methodological questions of the statistical analysis

To identify the FOB peculiarities, the application of a binary logistic regression is quite a logical choice (e.g. Welsh *et al.*, 2014; Wood, 2006), as this allows the demonstration of the family characteristic in the case of categorical variables (for the conceptual model,



STFP	<p><i>Component 1.</i> Efficiency (50.0% weight in STFP): based on the arithmetic average of the categorised values of the ratios [turnover<sub>t</sub>/total assets<sub>t</sub>], [operating (business) profit<sub>t</sub>/total assets<sub>t</sub>], [turnover<sub>t</sub>/total number of employees<sub>t</sub>], [operating (business) profit<sub>t</sub>/total number of employees<sub>t</sub>]</p> <p><i>Component 2.</i> The change in theoretical firm value (50.0% weight in STFP): [(total assets<sub>t</sub> – liabilities<sub>t</sub>)/(total assets<sub>t-1</sub> – liabilities<sub>t-1</sub>)] – 1] categorised values</p>	<p>STFP is the arithmetic average of components 1–2 [0–5]</p> <p>STFP is zero if the overall liquidity limit criterion [(current assets<sub>t</sub>/current liabilities<sub>t</sub>) ≥ 1] is not met</p>
LTFP	<p><i>Component 1.</i> Growth in turnover and operating profit, based on four years of data (33.3% weight in LTFP): growth rate based on categorised values of the base ratios of change in turnover and operating profit, growth stability based on categorised values of the chain ratios of change in operating profit</p> <p><i>Component 2.</i> Growth in balance sheet total, based on four years of data (33.3% weight in LTFP): growth rate categorised by the fixed base index numbers of the change in balance sheet total, growth stability categorised by the chain base index numbers of the change in balance sheet total</p> <p><i>Component 3.</i> Growth in the number of persons employed, based on four years of data (33.3% weight in LTFP): growth rate based on categorised values of the change in the number of persons employed in the fixed base index numbers, growth stability based on categorised values of the change in the number of persons employed in the chain base index numbers</p>	<p>LTFP is the arithmetic average of components 1–3 [0–5]</p> <p>LTFP is zero if the indebtedness limit criterion [(liabilities<sub>t</sub>/shareholders' equity and liabilities<sub>t</sub>) ≤ 0.8] is not met in each of the four years under consideration (also separately)</p>

Source: Own elaboration

**Table 2.**  
Applied financial  
measurement  
approach

see Figure 1), even if the error is logistically distributed. Furthermore, showing the *ceteris paribus* (filtering out the other variables' effect) impact of the different RBVs and other dependent variables is essential (see Hopkins and Ferguson, 2014). While other simpler approaches (e.g. one-way ANOVA) could identify the characteristics of the FOBs vs NFOBs, they are not capable of excluding other variables' coefficients.

Forty-four normalised values of resources and capabilities were included as independent variables with a backward selection method (Babbie, 2020) to preserve as much information as possible. Besides, the short- and long-term financial performance indicators and a logarithmically transformed business age were involved. In addition, two other control variables (the industry and the firm size category) were involved and divided into dummy variables. Reference values in Table 3 are presented in brackets in all cases after the respective factor.

The VIF value is acceptable for each of the variables (the maximum value is 3.07), and the Durbin–Watson test (1.94) does not show multicollinearity (Babbie, 2020). The general equation (Pituch and Stevens, 2015) of the investigated model can be seen in equation (1), where the dependent variable was the FOB dummy (0 for being an NFOB, 1 for being an FOB).

$$\text{logit}(p) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_{46} X_{46} + \beta_{47} X_{47} + \beta_{48} Z_1 + \beta_{49} Z_2 + \varepsilon \quad (1)$$

where:

logit(p) = the probability of being an FOB;

$X_1 - X_{47}$  = independent variables of logistic regression: variables of resources and capabilities, STFP, LTFP, LN business age;

$Z_1 - Z_2$  = control variables of logistic regression: NACE (G Trade and repair), Firm size (5–9 employees); and  
 $\varepsilon$  = random error.

After the application of the backward method, the final [equation \(2\)](#) is formalised with a total of 13 significant independent variables. Both of the control variables were preserved to filter out their effects.

$$\text{logit}(p) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} Z_1 + \beta_{15} Z_2 + \varepsilon \quad (2)$$

where:

$\text{logit}(p)$  = the probability of being an FOB;

$X_1 - X_{13}$  = independent variables of logistic regression: P1, P4, T4, H4, D3, N1, N2, DM2, M1, T1, P2, LTFP, LN business age;

$Z_1 - Z_2$  = control variables of logistic regression: NACE (G Trade and repair), Firm size (5–9 employees); and

$\varepsilon$  = random error.

#### 4. Results and discussion

To show in a separate way the business- and competition-related effects beyond [equation \(2\)](#), three additional analysis have been applied. In *Mod0*, the composite competitiveness index and the general business-related variables are presented, in *Mod1*, only the business-related variables and their effects are shown, while in *Mod2*, only those related to competitiveness' resources and capabilities are involved. In *Mod3*, the complete list of variables of [equation \(2\)](#) can be seen.

The general features of the model (explanatory power,  $-2$  Log likelihood, constant value and number of elements) are below in [Table 3](#). For *M3*, the Chi-square value of Omnibus Tests of Model Coefficients is 125.295, *df* is 30 and *p* is 0.000, Hosmer and Lemeshow Test is 0.869, the classification accuracy (based on the classification table correct percentages) increased from 55.6% to 64.6%, the Nagelkerke  $R^2$  is 20.1%, i.e. the logistic regression model can be considered as strong in social science researches. The rest of [Table 3](#) contains the average marginal effects (AME) and the corresponding significance values. Given these conditions, average marginal effects – *ceteris paribus* – mean an average change in the probability of being a FOB SME if the independent variable increases by one unit ([Table 3](#)).

The basic descriptive and correlation table can be seen in [Appendix 2 Table A2](#).

Relevant information can be found in *Mod0*, where the mere competitiveness index pure effect has been shown for FOBs. It can be seen that FOBs are characterised by a 3.5% lower competitiveness score. Regarding *Mod1*, the LTFP is not significant, while involving the competitiveness' resources and capabilities renders it significant for *Mod3*. LN business age has a positive probability (22.4%) for being a FOB, which also remains significant (even if slightly less) for *Mod3*. Regarding the industry, four sectors are significantly different from G Trade and repair, where two lose their significance, C Manufacturing industry and I Hotel-service, catering will have a higher probability, and S Other service becomes a significant probability for being a FOB. Regarding the size, in *Mod1*, the Medium-sized businesses have a significantly lower chance of being a FOB than the Micro businesses, but this probability disappears for *Mod3*.

In *Mod2*, the H4 The sophistication of compensation systems and M1 The uniqueness of products do not exert a significant effect on the probability of being a FOB, while in *Mod3*, both of them have a significant impact on the probability of being a FOB. For the rest of the

Regression independent and control variables	Mod0		Mod1		Mod2		Mod3	
	Sig.	AME	Sig	AME	Sig	AME	Sig	AME
COMP index	0.029	-0.035**						
LTFP			0.165	0.020			0.018	0.034**
P1 Product innovation					0.061	-0.115*	0.010	-0.157**
P4 The uniqueness of firm's product and continuous innovation					0.063	-0.147*	0.043	-0.161**
T4 The level of application of ICT tools					0.068	0.137*	0.090	0.125*
H4 The sophistication of compensation systems					0.162	-0.098	0.075	-0.123*
D3 Information sharing			0.001	-0.198***	0.001	-0.198***	0.000	-0.181***
LN business age							0.000	0.204***
N1 The number of economic cooperation and innovation agreements	0.000	0.212***	0.000	0.224***	0.002	-0.292***	0.013	-0.225**
N2 The time of networking as compared to the establishment of the firm					0.000	0.221***	0.004	0.174***
DM2 The level of firm's competition in the market			0.013	-0.141**	0.013	-0.141**	0.000	-0.231***
M1 The uniqueness of products			0.344	0.056	0.344	0.056	0.080	0.103*
T1 The level of firm's technology			0.067	-0.204*	0.067	-0.204*	0.097	-0.183*
P2 Activities/effort concerning the introduction of new or amended product			0.000	0.271***	0.000	0.271***	0.001	0.225***
Industry A Agriculture, forestry and fishing (G Trade and repair)	0.539	0.079	0.295	0.131			0.207	0.160
Industry C Manufacturing industry (G Trade and repair)	0.047	0.093**	0.056	0.090*			0.000	0.181***
Industry E Water supply, sewage collection, treatment, waste management (G Trade and repair)	0.722	-0.094	0.873	-0.045			0.975	0.008
Industry I Hotel-service, catering (G Trade and repair)	0.142	0.122	0.091	0.139*			0.003	0.232***
Industry H Transport, storage (G Trade and repair)	0.075	0.134*	0.076	0.134*			0.130	0.112
Industry J Information, communication (G Trade and repair)	0.004	-0.234***	0.001	-0.253***			0.130	-0.137
Industry K Financial, insurance activity (G Trade and repair)	0.675	-0.108	0.646	-0.118			0.699	-0.090
Industry L Real estate transactions (G Trade and repair)	0.460	-0.093	0.693	-0.052			0.525	-0.074
Industry M Professional, scientific, technical activity (G Trade and repair)	0.121	-0.094	0.058	-0.113*			0.913	-0.007
Industry N Administrative and support services (G Trade and repair)	0.964	0.004	0.965	0.004			0.592	0.047
Industry P Education (G Trade and repair)	0.579	0.088	0.736	0.053			0.452	0.114
Industry Q Human health and social care (G Trade and repair)	0.861	0.042	0.803	0.061			0.491	0.157
Industry S Other services (G Trade and repair)	0.205	-0.226	0.205	-0.227			0.037	-0.251**
Size Small business 10-49 employees (Micro business 5-9 employees)	0.621	-0.020	0.255	-0.045			0.908	-0.005
Size Medium-sized business 50-249 employees (Micro business 5-9 employees)	0.226	-0.078	0.030	-0.131**			0.726	-0.023
Nagelkerke R2	0.120		0.116				0.098	
Cox and Snell R2	0.090		0.086				0.073	
Pseudo R2	0.063		0.060				0.055	
-2 Log likelihood	944.456		947.245				958.033	
Constant	-3.668		-3.150				0.937	

Notes: \*\*\*Significant at 1%, \*\*significant at 5%, \*significant at 10%

Source: Own elaboration

**Table 3.**  
FOB SMEs' binary  
logistic regression  
results

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competitiveness' resources and capabilities, the involvement of business variables does not affect their direction of the significance for the probability of being a FOB.

Regarding the complex approach and the most important empirical contributions in *Mod3*, the significant probabilities of FOB peculiarities at LN business age, LTFP and 11 variables of resources and capabilities can be classified into five groups:

- (1) LTFP: higher LTFP is more likely a characteristic of FOBs.
- (2) innovation intensity: low level of product (P1) and continuous innovation (P4).
- (3) administrative procedures: no formal performance evaluation or remuneration system (*H4*), small-scaled information sharing system (D3) and a high level of ICT tools (T4).
- (4) longevity: a higher business age more likely characterises the FOBs.
- (5) business operation area: small operational area (DM2), low level of business cooperation (N1), but a close connection with the local market (N2).

A strong relationship can be detected between the dependent variable of being an FOB and the long-term financial performance (LTFP: 3.4% probability), while the STFP was not significant. This result is in line with the findings of [Cheng \(2014\)](#) and [Miroshnychenko et al. \(2020\)](#), and in this way, it can be stated that considering the complexity of resources and capabilities, the LTFP is definitely a characteristic of the FOBs, which contributes to the mainstream discussion. This is the first important conclusion of the present paper.

The results show a relatively lower level of innovation intensity in FOBs than in NFOBs, even in product innovation (P1: -15.7%) and continuous innovation (P4: -16.1%). This is in line with the "capability-willingness paradox"; as conservative FOBs make strategic decisions for stability and long-term orientation, they are both reluctant to make radical innovations that are too risky and are willing to commit to improvements that will support the business's survival and family well-being. Because of this contradiction, family businesses have a higher capability and lower willingness to innovate ([Chrisman et al., 2015](#)), even in the presence of other resources and capabilities.

Regarding the administrative procedures, it has been found that the higher level of a well-developed compensation system characterises less likely the FOBs (*H4*: -12.3%). The -18.1% probability of information sharing (D3) highlights that the family members probably have more conflicts leading to lower information sharing with "outsiders" ([Carlock and Ward, 2001](#); [Poza and Daugherty, 2014](#)). Also, it is a trend to have family members in the business, which might lead to non-formalised HR routines (e.g. recruitment, selection, compensation) and inconsistency in HR. This is in line with the findings of [Combs et al. \(2018\)](#) and [Kidwell et al. \(2018\)](#). Furthermore, the application of ICT tools (T4: 12.5% probability) is high among the FOBs, which means that they invest in the necessary resources to obtain a better than the minimum level of ICT solutions. This supports the within-family decision-making process to be more flexible and avoid bureaucratic procedures ([Kellermanns and Eddleston, 2004](#)).

Significant results were found at business age with a higher probability (20.4%) of being an FOB. This means that the FOB is accompanied by a long-term vision [in accordance with the results of [Miller and Le Breton-Miller \(2005\)](#) and [Lohe and Calabrò \(2017\)](#)]; hence, the business lifespan is longer. FOB managers focus on long-term consequences when making decisions and pay particular attention to the future impact of their actions ([Lumpkin et al., 2010](#)). Long-term stability and predictability are also a characteristic of FOBs in terms of financial flows, turnover and human capital ([Colli and Rose, 2008](#)).

Results show that the higher number of economic cooperation and innovation agreements characterises less likely (N1: -22.5% probability) the FOBs, but simultaneously, those are cultivated for a longer period (N2: 17.4% probability). The results are in line with the findings of [Poza and Daugherty \(2014\)](#), who stated that FOBs are able to maintain friendly relations with most partners, so they are able to respond flexibly to market changes. The FOBs also focus more on the local market (DM2: -23.1% probability) than the regional, national or international ones. Local embeddedness can help them overcome a lack of resources at a start-up or a temporary difficulty ([Bird and Wennberg, 2014](#); [Fendri and Nguyen, 2019](#); [Baù et al., 2019](#)). Based on the results, it can be stated that the FOBs have geographically small-scale operations, which is plausible because distance endangers the family's control. Expansion inevitably entails the need to employ more qualified non-family leaders, which also unwillingly decreases family control in leadership ([Hennart et al., 2017](#)). On the other hand, if several generations work together in the business, it increases the risk-taking and the possibility of expansion ([Dou et al., 2019](#)).

In *Mod3*, as regards control variables, there is no significant relationship considering the business size category. There are three sectors where the difference from the G Trade and repair is significant: FOBs operating in the C Manufacturing industry and I Hotel-service, catering with higher probabilities (18.1% and 23.2%, respectively) and in S Other services with lower-level (-25.1%) probability. These aspects are Hungarian peculiarities as they have long-term traditions with international success stories, too.

The second most important conclusion of the results-based discussion is that, nevertheless the fact that the findings are in line with the mainstream literature, the methodology applied a complex approach by involving every resource and capabilities simultaneously. The mainstream literature applies single element-based analysis and discussion to show the characteristics of the FOBs. Due to the complex approach, the intercorrelated effects are filtered out, and the pure impacts can be detected.

## 5. Conclusions

### 5.1 Concluding remarks

The primary purpose of this study was to examine the differences between Hungarian FOBs and NFOBs in resources and capabilities of RBV-based competitiveness and financial performance.

Empirical results revealed that FOBs have a lower competitiveness index but a significantly stronger LTFP [in accordance with [Cheng \(2014\)](#) and [Miroshnychenko et al. \(2020\)](#) but in contrast with [Pindado and Requejo \(2015\)](#) and [Sari et al. \(2019\)](#)] than the NFOBs, which is accompanied by higher longevity [in line with [Miller and Le Breton-Miller \(2005\)](#) and [Lohe and Calabrò \(2017\)](#)]. The FOBs are characterised by more informal administrative procedures [consistent with [Combs et al. \(2018\)](#) and [Kidwell et al. \(2018\)](#)] and a stronger focus on the local niche markets [as [Poza and Daugherty \(2014\)](#) also note] considering their networking and selling-related efforts. It was also found that the innovation intensity is significantly lower [confirming [Villalonga and Amit \(2006\)](#) and [De Massis et al. \(2013\)](#)] for the FOBs than that of their NFOB counterparts.

### 5.2 Implications

Hungary has undergone significant economic and political changes in recent decades ([Toplišek, 2020](#)): a continuous transition from a centrally planned economy to a market-oriented economy, privatisation, deregulation, liberalisation of the business environment and the country's accession to the European Union in 2004 ([Nölke and Vliegenthart, 2009](#); [Sallai and Schnyder, 2018](#)). The understanding of the specific strengths and weaknesses of Hungarian FOBs can help policymakers design business development and support schemes, entrepreneurs to prepare

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strategies for success within Hungary's dynamically evolving business environment amidst continuous and significant economic and political change. Empirical experience are useful for countries that are going through similar transitions now or in the future.

Policymakers should acknowledge these endeavours by formulating suitable policies that foster the competitiveness of SMEs (Dvouletý and Blažková, 2021). This can be achieved through initiatives such as providing financial and human resources support (e.g. low innovation intensity can be increased by specific governmental funds). However, it is crucial for these policies to be meticulously crafted and customised to meet the specific requirements of SME owners and managers. Failure to do so could result in ineffective outcomes and render the policies unsuccessful (Dvouletý *et al.*, 2020). Understanding the local embeddedness and operation of SMEs provides added value for policymakers and contributes to the diminishing of the regional development differences within a country. The results help to identify the necessary infrastructure investments (networking, innovation, human capital and long-term orientation) supporting economic development.

The study is useful for academia in enriching the available empirical experience on RBV literature, SME management and finance, competitiveness and FOB literature. The background literature review described a complex, multifaceted view of competitiveness and its RBV components (see Newbert, 2008). This paper ensures a deeper understanding of contrasts in the structure of performance-driving factors (resources and capabilities) and performance outcomes (financial performance), while other studies mainly focus on the relevant elements separately. In addition, the mainstream literature focuses primarily on the listed businesses and their classic performance dimensions, while the characteristics of the economically significant non-listed majority remain undiscovered.

Entrepreneurs, managers and investors should internalise these findings before launching a new business or making decisions to FOBs'. Even if the competitiveness is lower, the aspects of longevity, the long-term objectives dominate the short-term goals. A better understanding of the specificities of family businesses will also help entrepreneurs identify and understand their individual challenges, opportunities and weaknesses, enabling them to adopt more sophisticated business strategies to help them gain a competitive advantage.

### 5.3 Limitations and future research

The study exploits the advantage of the high level of transparency and availability of archival financial and accounting data, firm ownership information and business networks from a standard quality and objective data source (OPTEN Ltd.). This feature limits the extension of the research to other countries, even if it would be essential to explore the country-specific socio-cultural characteristics, as FOBs contribute to the long-term economic development at the EU level and globally. Conversely, a longitudinal research framework could further explore the FOBs characteristics.

Another limitation is that the SMEs in the sample are mainly at the stage of maturity in the business life cycle with significant market experience. Thus, the peculiarities of the introduction and growth stages remain uncovered.

In the future, the analysis of the two-way causality between resources and capabilities and financial performance also needs to be investigated to identify whether the resources and capabilities are causing the financial performance or vice versa.

The RBV methodology can be criticised for not considering the external factors, which would result in a higher explanatory power. In this paper, the sector is considered as a control variable, which implicitly covers some elements from the external environment. Nevertheless, in a future analysis, a sophisticated analysis of the relationship between the



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supplier–buyer relationship and the supply chain should contribute to understanding the peculiarities of the FOB SMEs.

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Code Description

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*Human capital*

- H2 The problems with employees  
H3 The share of employees participating in training programmes  
H4 The sophistication of compensation systems  
H5 The uniqueness of human capital

*Product*

- P1 Product innovation  
P2 Activities/effort concerning the introduction of new or amended product  
P3 The share of new products/services in sales  
P4 The uniqueness of firm's product and continuous innovation

*Domestic market*

- DM1 The geographic scope of selling  
DM2 The level of firm's competition in the market  
DM3 The expected growth of the target market in five years  
DM4 The intensity of competition  
DM5 Quick response to costumers' demand

*Networking*

- N1 The number of economic cooperation and innovation agreements  
N2 The time of networking as compared to the establishment of the firm  
N3 The reliance to outside help in business development  
N4 Uniqueness of networking relationship

*Technology*

- T1 The level of firm's technology  
T2 The age of available technology used by the firm and technological innovation  
T3 Environmental investment and quality assurance  
T4 The level of application of ICT tools  
T5 Uniqueness of applied technology, possession of license or know-how, product management and quality assurance

*Decision-making*

- D1 The application of the different sources of information  
D2 The application of financial analyses in the business  
D3 Information sharing  
D4 Consultation in decision-making  
D5 Administrative routines/operations knowledge sharing of the business organisation

*Strategy*

- S1 The direction of strategy (defensive, passive, proactive)  
S2 Growth strategy based on the number of business units  
S3 The leader's entrepreneurial traits  
S4 The uniqueness of firm's proactive strategy

*Marketing*

- M1 The uniqueness of products from a marketing perspective  
M2 The pricing of the main product  
M3 Sophistication of distribution channels  
M4 Applied marketing and communication tools  
M5 Marketing innovation  
M6 The uniqueness of marketing methods

**Table A1.**  
Full list of resource  
and capability  
variables

(continued)

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CR  
34,7

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Code	Description
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*Internationalisation*

- |    |   |
|----|---|
| I1 | The significance of foreign buyers      |
| I2 | The share of export in sales            |
| I3 | Language capabilities at business level |
| I4 | The uniqueness of location              |

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*Online presence*

- |      |   |
|------|---|
| O1-2 | Web 1.0 (speed, complexity and appearance of online presence) |
| O3   | Web 2.0 (Mail, Apple, GPlus, Facebook, Twitter, Instagram)    |
| O4   | Online marketing applications                                 |

**Table A1.**

**Source:** Own elaboration

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	M	SD	FOB-NFOB dummy	COMP index	LTFP	P1	P4	T4	D3
FOB-NFOB dummy	0.44	0.50	1						
COMP index	4.78	1.18	-0.105***	1					
LTFP	2.01	1.28	0.007	0.283***	1				
P1	2.15	1.16	-0.087**	0.109***	0.056	1			
P4	2.24	0.96	-0.097***	0.510***	0.191***	0.122***	1		
T4	2.92	1.05	-0.003	0.488***	0.107***	-0.036	0.169***	1	
H4	0.95	1.13	-0.084**	0.484***	0.117***	0.027	0.163***	0.237***	1
D3	1.96	1.31	-0.144***	0.413***	0.143***	-0.026	0.129***	0.309***	0.081**
LN business age	2.87	0.46	0.198***	0.025	-0.173***	-0.047	-0.021	0.081**	0.000
N1	1.46	1.30	-0.036	0.537***	0.125***	0.000	0.158***	0.285***	0.170***
N2	1.46	1.51	0.050	0.293***	-0.028	-0.064*	0.024	0.170***	0.123***
DM2	1.59	1.33	-0.128***	0.455***	0.096***	0.102***	0.158***	0.236***	0.211***
M1	2.41	1.24	0.004	0.358***	0.067*	0.031	0.222***	0.155***	0.059
T1	2.29	0.71	-0.090**	0.435***	0.105***	0.086**	0.240***	0.159***	0.119***
P2	0.87	1.41	0.017	0.525***	0.182***	0.082**	0.242***	0.222***	0.122***
Industry	7.46	3.87	-0.105***	0.027	0.077**	-0.013	0.050	-0.016	0.081**
Size	1.77	0.63	-0.013	0.311***	0.096***	0.017	0.068*	0.250***	0.186***

Notes: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%

Source: Own elaboration

(continued)

Table A2.

	LN business age	N1	N2	DM2	M1	T1	P2	Industry	Size
FOB-NFOB dummy									
COMP index									
LTFP									
P1									
P4									
T4									
H4									
D3									
LN business age	1								
N1	0.004	1							
N2	0.158***	0.565***	1						
DM2	0.060	0.147***	0.094**	1					
M1	-0.064*	0.032	0.038	0.088**	1				
T1	0.019	0.211***	0.115***	0.268***	0.208***	1			
P2	0.001	0.611***	0.101***	0.177***	0.060	0.294***	1		
Industry	-0.100***	-0.035	-0.069*	-0.235***	-0.016	-0.032	-0.043	1	
Size	0.139***	0.182***	0.082**	0.280***	-0.061*	0.194***	0.179***	-0.156***	1