Relationship between different resource and capability configurations and competitiveness - Comparative study of Hungarian family and non-family firms

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Abstract

Purpose – The purpose of this paper is to identify different types of resources and capabilities configurations among Hungarian family and nonfamily firms and explore which compositions can be considered competitive. In a competitive, dynamic world understanding which sets of resources and capabilities lead to a higher level of competitiveness is vital.

Design/methodology/approach – The authors used the results of a quantitative competitiveness survey carried out between November 2018 and July 2019 in Hungary. The authors used the Firm Competitiveness Index (FCI) to measure competitiveness and the RBV approach to understand which configurations of resources and capabilities are responsible for a higher level of competitiveness based on 32 variables. An exploratory factor and cluster analysis were conducted to analyze the ownership's effect on firm competitiveness. The final sample size contained 111 companies, where 53 were identified as family and 58 as nonfamily firms.

Findings – Factor analysis reveals five factors determining resources and capabilities: "operational", "leadership", "knowledge management", “transformation” and “networking”. Based on these factors, the cluster analysis identified five groups in terms of types of family and nonfamily firms: “Lagging capabilities”, “Knowledge-based leadership, “Innovativeness and transformation-oriented management”, “Relationship-oriented management” and “Business-operation oriented management”. Results show that nonfamily businesses focus on operational and leadership capabilities, reaching a higher Firm Competitiveness Index than family businesses, which are likely to invest more in their networking, transformation, and knowledge management capabilities.

Originality/Value – By defining different configurations family and nonfamily firms rely on to reach competitiveness the paper applies an essential element to the Hungarian and Middle Eastern European context of family business research. The findings contribute to developing family business literature and point out specific resources and capabilities family firms should focus on to shift towards reaching a higher level of professionalization and competitiveness. The characterization of different types of competitiveness comparing family and nonfamily firms enables the firms to assess customized implications.

Keywords Family Firms, Nonfamily Businesses, Competitiveness, Resource-based view, Hungary

Paper type Research paper

1. Introduction

In one of the most influential studies of family business professionalization, the authors questioned why a family firm cannot be like a nonfamily business (Stewart and Hitt, 2012). They claimed if family firms were more similar to nonfamily firms and professionalized, they could reach a higher level of performance and be more competitive. Comparing family and nonfamily businesses along different corporate measurements has a long history from various research contexts, such as the US (Anderson and Reeb, 2003), Italy (Culasso *et al*., 2015), Finland (Kirmanen and Kansikas, 2010; Larimo, 2013) Chile (Martínez *et al*., 2007) and recently Hungary (Wimmer and Matolay, 2020; Csákné-Filep *et al*., 2023) with mixed results, either

family firms outperform nonfamily businesses, or they indeed have some kind of a disadvantage of family ownership.

Family firms rely on different resources and capabilities than nonfamily firms (Habbershon and Williams, 1999; Le Breton-Miller and Miller, 2006; Gomez-Mejia *et al.,* 2007; Ljungkvist *et al*., 2023) which results in a different level of competitiveness (Sirmon and Hitt, 2003). As family firms tend to invest more longitudinally and have a unique combination of socio-emotional wealth (Gomez-Mejia *et al.,* 2007) between the family and the business, they possess resources that may be fundamental to reaching a competitive advantage nonfamily businesses don't. However nonfamily firms have a higher sense of financial and operational aspects, which makes them more operation-focused and efficiency-conscious.

Although many excellent articles appeared about the competitiveness of small and medium-sized enterprises in Hungary (Szerb et al., 2014; Tálas and Rózsa, 2015) only a few recent articles paid specific attention to family and nonfamily businesses comparison (Csákné Filep *et al*., 2023) from a resource and capability-based point of view. Family firms play a dominant role in Hungary, as the possibility for legal entrepreneurship emerged after the regime change in 1990. In the last 30 years, family firms have become the backbone of the Hungarian economy, being responsible for 50% of the total employment in the country (Wieszt and Drótos, 2018). A significant number of family firms will need to deal with the difficulty of succession in the upcoming years because the majority of founders who started their enterprises after the fall of the centrally managed governmental structure are now approaching retirement. Although there are approximately 31,000 family firms in the small and medium-sized enterprise sector (Mosolygó-Kiss *et al*., 2018) a relatively small number of research paid special attention to the resource and capability configurations these companies possess and their effect on competitiveness.

Meanwhile, it is vital to investigate how managing various resources leads to competitive advantage (Sirmon and Hitt, 2003), especially with the growing literature on small and medium-sized family firms that possess distinctive characteristics that make them significantly different from larger companies (Valenza *et al*., 2023). Against this background, our paper analyzes competitiveness and aims to identify different types of family and nonfamily firms regarding their resources and capabilities. Hence by focusing on the competitiveness of the firms by the Firm Competitiveness Index (FCI) (Chikán *et al*., 2022) in our exploratory study from a capability and resource-based view (RBV), we found that the results showing a significant difference in family and nonfamily business competitiveness. We worked with a sample of 111 firms obtained from a competitiveness survey of Hungarian firms conducted between November 2018 and July 2019. Combining a principal component factor and cluster analysis reveals that family firms fall mainly into the lagging category, while nonfamily businesses are enlisted into the more professional business-operations-oriented group. In addition to capturing the different types of family and nonfamily firms, this study provides practical implications on how and which strategy family firms should follow if they want to shift to a more professional way of operation. However, it is noteworthy that in some cases, the current strategy and resource-capability configurations family firms have can also be beneficial.

This paper contributes to research and practice in several ways. Firstly, by drawing on the resource-based theory, we enhance the understanding of family and nonfamily businesses' competitiveness by showing that Hungarian family and nonfamily businesses find different paths to reach competitiveness, which results in different compositions of resources and capabilities. The results indicate that family firms tend to invest longitudinally (Le Breton-

Miller and Miller, 2006; Németh and Dőry, 2019) and develop unique capabilities that nonfamily firms do not have (Habbershon and Williams, 1999; Sirmon and Hitt, 2003) and experience *knowledge management*, *networking*, *innovativeness,* and *transformation resources and capabilities* are more vital than *business operation* related. In our analysis *leadership* and *operational capabilities* appeared more essential for nonfamily businesses, making them more professional in this sample and reaching a higher level of competitiveness. Secondly, we highlight that interestingly not all family firms follow this strategy, and by relying not necessarily on operational excellence, family firms can also reach a higher level of competitiveness by focusing on their knowledge management and networking capabilities. Last but not least, based on the cluster analysis, our typology can help practitioners to self-assess their businesses and develop individually customized implications on how to transform their company to a more professional way of working by focusing on their most essential resources and capabilities.

The remainder of the article is divided into five main parts: the following chapter provides a definition of competitiveness and overviews the studies about the comparison of family and nonfamily businesses. Next, the detailed methodology is outlined and described, and then the analysis and the results are presented. Finally, the study's main conclusions are highlighted in the discussion, with the paper's main limitations and future research lines.

2. Literature Review

2.1 Ownership effects of family and nonfamily firms

Over the years, several studies from various regions examined how family and nonfamily firms perform (Daily and Dollinger, 1992; Cromie *et al*., 1995; Westhead *et al*., 2001; Anderson and Reeb, 2003; Sultan *et al*., 2017), but the results are diverse and varied. But what is the reason behind it? Authors often argue (Anderson and Reeb, 2003; Le Breton-Miller and Miller, 2006) that family firms outperform nonfamily companies.

Comparing family and nonfamily businesses has a long history (Gallo *et al*., 2000). Among the recent studies from the past twenty years, authors found that family firms outperform nonfamily businesses in terms of Tobin Q (Anderson and Reeb, 2003; Villalonga and Amit, 2006; Martínez *et al*., 2007) sales and operations (Anderson *et al*., 2003; McConaughy *et al*., 2001), longevity and corporate governance (Le Breton-Miller and Miller, 2006).

Although the literature is inconsistent, which type of organization performs better or what resources and capabilities explain the difference in performance, we can differentiate three main groups of scholars: a) those who found significant differences in family and nonfamily ownership and argue that family firms outcompete nonfamily businesses, b) authors who also found differences but in favour of nonfamily firms, and c) studies where the ownership had a neutral effect on corporate performance.

For example, Daily and Dollinger (1992), working with a sample of 186 manufacturing businesses in Indiana (USA) between 1986 and 1988 with fewer than 500 employees and sales levels of less than $30 million per year, found that family businesses surpassed nonfamily firms in the rate of sales, profit margin increases and, in an elaborated measure using four comparison points, in each business with its main competitor.

Anderson, Mansi, and Reeb (2003), similarly to Gallo, Tápies, and Cappuyns (2004), found that family firms enjoy a lower cost of debt financing than nonfamily businesses. They

derive from the long-term presence of the family in ownership as opposed to their rivals, where ownership and management could change on a relatively frequent basis. Le Breton-Miller and Miller's (2006) findings are in harmony with these results that family firms outperform nonfamily businesses mainly because of their long-term thinking and investing approach.

In one of the most influential studies on family ownership and firm performance, Anderson and Reeb (2003), examining S&P 500 firms between 1992 and 1999, report that family firms significantly outperform nonfamily businesses in terms of Tobin Q, return on equity (ROE), and return on assets (ROA) measurements. Contrary to the belief that family ownership harms firm performance, the authors raise evidence that family firms are indeed a competitive form of organization.

Martínez, Stöhr, and Quiroga (2007) also found in a sample of 175 firms comparing 100 family and 75 nonfamily firms over ten years that family firms perform significantly better than nonfamily businesses' return on assets, return on equity, and Tobin Q. However, the Tobin Q value of family firms was slightly lower than nonfamily businesses. The authors claim that the reason might be that family firms are undervalued in market capitalization. In a subsample with higher market presence and liquidity, they found that family firms performed better in the Tobin Q value. The authors also claimed that when family firms tend to professionalize their management and governance bodies, they can achieve better than their rival nonfamily firms. Kirmanen and Kansikas (2010), on a Finnish sample of 1805 firms with less than 50 employees, found that regardless of the family firm's generation, whether it is first, second, or later generation managed, they outperform nonfamily businesses in profits and return on assets. However, another study on a Finnish sample comparing 182 family and 161 nonfamily firms by Larimo (2013) found that nonfamily businesses perform better in two dimensions of four related to export firm performance, which can be perceived as an essential variable of competitiveness.

Culasso and her colleagues (2015), using a sample between 2006 and 2011 of the Italian Stock Exchange of 55 family and 25 nonfamily businesses, found mixed results in terms of firm financial performance; nonfamily firms outperformed family firms in terms of return on equity (ROE) but underperformed in three other measurements, namely, return on invest (ROI), return on sales (ROS) and return on assets. They also found that when a company is not large, the family's presence is relevant to reaching better financial performance. Still, when the firm becomes a large-sized company, it becomes irrelevant.

However, other evidence suggests that nonfamily firms are as competitive as family firms. Cromie and his colleagues (1995) found that family firms have less turnover than nonfamily businesses in a sample of 286 families and 96 nonfamily firms. Gallo, Tápies, and Cappuyns (2004), working with a model of 204 nonfamily and 101 family businesses from Spain from 1993-1997 with more than €21M per year in revenue, found that nonfamily companies outperform family firms in terms of sales and sales per employees. They also pointed out that family businesses have lower rates of debt, which is a form of risk aversion and a possible way of professionalizing the business to leap forward more considerable risks and let go of owning all the (business) capital.

According to Gomez-Mejia, Nuñez-Nickel, and Gutierrez (2001), family firms are more likely to favour family members in filling management positions, which can lead to competitive disadvantages compared to nonfamily businesses. Furthermore, other groups of scholars stated that family ownership only creates value when the founder serves as the CEO

of the firm. Still, firm value is harmed when one of its successors comes into power (Villalonga and Amit, 2006).

Barbera and Moores (2013) examined the productivity of family and nonfamily firms in Australian small and medium-sized companies with less than 200 employees. They found that family firms are significantly less productive from a total factor productivity point of view than nonfamily firms. Family firm capital contributes less to the total output than the benchmark nonfamily firm capital. Kota and Singh (2016), in an Indian study, found that nonfamily businesses were better performers in every financial and non-financial aspect, e.g., market capitalization, profitability, size, debt position, and number of employees than family firms. Morck, Strangeland, and Yeung (2000) state that family ownership and control tend to result in poor firm performance comparing similar family firms from the USA and Canada through financial measurements in six years.

Jaskiewicz and Klein (2005 in Martínez *et al.,* 2007) present that out of the 66 studies that deal with the distinction in corporate performance between family and nonfamily firms, only about half (42%) of those studies did family-owned businesses significantly outperform nonfamily firms. Sultan, de Waal and Goedegebuure (2017) comparing 150 Palestinian high-performing family and 50 nonfamily organizations also found that nonfamily firms perform significantly better than family firms in all scores.

Last but not least, it is essential to mention that some studies found no significant difference between family and nonfamily firms, as governance or ownership has a neutral effect on economic performance (Sciascia and Mazzola, 2008) or revealed mixed results (Saidat *et al*., 2019) where ownership concentration has an insignificant correlation with corporate performance, but the size of the board in terms of Tobin's Q and return on assets have a negative relationship within family firms regarding performance. We also find conflicting results from Hungary, where Németh and Dőry (2019) compared the performance of family- and non-family-owned enterprises in terms of innovation performance and professionalization. However, they discovered that family firms have a substantially stronger longer-term orientation than their nonfamily counterparts, they found no significant differences based on ownership to innovation orientation and proactive attitude.

2.2 The resource-based view and firm competitiveness

Over the past three decades, the resource-based approach to strategic management has arguably become one of the most effective approaches in the discipline. Differences arising from the heterogeneity of firms result in different strategies, which can be traced back to differences in the resources and capabilities available and the way they are used. Followers of the resource-based school see the primary explanation for differences in firm performance in unequal resource endowments and in the differential ability to combine available resources, in contrast to the approach of Michael Porter (1980), who sees industry forces acting on the firm as the determinant of its successful strategic positioning. The resource-based view proponents argue that performance differences are mainly caused by differences in the use of available resources and not by differences in the attractiveness of different industries. The school emphasizes the importance of unique, hard-to-replicate resources for sustaining performance (Rumelt *et al*., 1991). Meanwhile, there are several strategic management approaches to assess the differences in competitiveness (and potentially performance) between family and nonfamily firms, such as the agency theory (Jensen and

Meckling, 1976, Chua, Chrisman and Bergiel, 2009), the stewardship theory (Miller and Le Breton-Miller, 2006; Zahra *et al.,* 2008) or the institutional view (Fang *et al*., 2012) we believe that the resource-based view of the firm is an adequate framework to assess the different types of competitiveness relying on different configurations of resources and capabilities.

The resource-based view aims to explain why some firms can outperform their rivals who may be similar to them, operating in the same industry and market (Barney, 1991). More competitive companies can develop resources and capabilities that their competitors can not imitate or substitute (Barney, 1991; Teece *et al*., 1997). The resource-based approach is a valuable framework for determining what makes a company successful. Still, it does not precisely answer why some companies differ. Resources that are scarce, helpful, difficult to replicate, and irreplaceable are insufficient for a company to gain a competitive advantage in dynamic markets (Teece *et al*., 1997; Sirmon and Hitt, 2003).

Barney (1991) first defined a framework for identifying the internal corporate resources that can be used to achieve sustainable competitive advantage. Initially, the VRIN model, where the last letter of the acronym referred to non-substitutability, was replaced by organizational embeddedness, giving rise to the now well-known VRIO model to explore the specific capabilities to maximize the resources the firm needs (Eisenhardt and Martin, 2000; Chirico, 2007)

We know that family businesses reach competitiveness in another way than nonfamily firms do (Le Breton-Miller and Miller, 2006). Competitiveness has various definitions and is a complex, multidimensional construct (Moreno-Gómez and Lafuente, 2020). To develop a successful competitive strategy, understanding the relationship between resources and capabilities is key (Sirmon *et al*., 2007). Habbershon and Williams (1999) apply the resource-based view in the research of family firm context and claim that they have an idiosyncratic way of operating, as the combination of the family and the business can result in a so-called *familiness,* which can lead to a set of different combinations of various resources and capabilities which grant competitive advantage to family firms. They named this *distinctive familiness; however*, the authors point out that typical family firms' issues such as nepotism and altruism could lead to competitive disadvantage, which they called *constrictive familiness* (Habbershon *et al*., 2003).

The resource-based view focuses on results in firm performance and is perceived as an adequate framework to assess the competitiveness of companies on the development of idiosyncratic capabilities and can best explain why family businesses have a competitive advantage (Mashavira *et al.,* 2019; Zhang *et al*., 2022). However, recent research has discovered that versatile resources are associated with a higher level of growth than valuable, rare, inimitable, and non-substitutable attributes (Nason and Wiklund, 2015). We know that family and nonfamily firms differ in terms of which resources and capabilities they invest in (Habbershon and Williams, 1999; Le Breton-Miller and Miller, 2006; Gomez-Mejia *et al.,* 2007), which may result in different competitiveness. In this study we adopt Chikán's (2008, pp. 24-25) definition where "*firm competitiveness is a capability of a firm to sustainably fulfil its dual purpose: meeting customer demand at profit. This capability is realized through offering on the market goods and services which customers value higher than those offered by competitors. Achieving competitiveness requires the firm's continuing adaptation to changing social and economic norms and conditions*." Competitiveness can be defined in several ways, but the definition adopted in this research is similar to previous studies (Falciola *et al*., 2020). While composing a competitiveness index Falciola et al., (2020) classified

variables at three layers of the economy, such as firm capabilities, the business ecosystem and the national environment. In this study, we used variables on a firm level.

We showed that the current literature regarding family and nonfamily business competitiveness is diverse, and gathering evidence from a Middle Eastern European context seems relevant. While family and nonfamily firms draw on different resources and capabilities regarding their competitiveness, our study addresses the research gap from a resource-based theory and extends the debate on a firm level, we can form our research questions:

RQ1: What different configurations of resources and capabilities do Hungarian family and nonfamily firms show?

RQ2: How do different configurations of resources and capabilities among Hungarian family and nonfamily firms affect competitiveness?

3. Research Method

3.1 Definition of family firms

There is no ultimate way to define family firms, as there are so many interpretations addressing the issue (Ratten, 2023). Authors can define family firms differently depending on the research environment based on the size of ownership, transgenerational aim, and active involvement of the family in management (Martins and Pires, 2023). Due to an Eastern-Middle European context, we identify family firms as having at least 50+1% ownership in the company, and one family member is active in the firm's management. This approach is widely accepted and similar to previous research (Sharma *et al*., 1997; Zellweger, 2017).

3.2 Sampling and Data Collection

The Competitiveness Research Centre of Corvinus University of Budapest has conducted a regular competitiveness survey of Hungarian firms every four years since 1996. In the sixth most recent wave of the programme, in-person surveys were conducted between November 2018 and July 2019 (Chikán *et al*., 2022). The survey focused on businesses with at least 50 employees. The fundamental goal of the survey was to explore the competitiveness of Hungarian enterprises (Wimmer and Matolay, 2020).

The original database consisted of 4295 firms which were provided by the Hungarian Central Statistical Office, where more than 2000 companies were approached to fill out the perception-based surveys. The questionnaires are relatively long, each of them adding up to more than fifty pages, consisting of five different parts, which cover the main functional areas of the company. The questionnaires were conducted by a professional market research company and financed by university funds. The first module of the questionnaire was completed by the executive level with the help of professional interviewers, meanwhile, the other four parts were self-administrated by the management via an electronic questionnaire. The final database consists of 234 companies which is approximately an 11,7% response rate. After a thorough data cleaning to exclude those companies that did not fill out the survey properly, could not be identified transparently or had missing financial data, the final sample size in the database was 209 enterprises. If we compare the distributions based on the companies with more than 50 employees, which are the focus of the research, the sample

can be considered representative of medium and large companies (Wimmer and Csesznák, 2021, pp. 43-44). The share of medium-sized companies in the database is 83,2% and the selected sample for this study is representative in terms of the size of the company as the share of medium-sized firms in our sample is 83,2%.

As family firms in Hungary are mainly found among small and medium-sized enterprises, we excluded nonprofit and large organizations and foreign ownership to make family and nonfamily businesses comparable. Thus, our final sample included 111 firms only with domestic ownership, of which 53 were family and 58 were nonfamily businesses.

Table I. demonstrates that the composition of the database reflects the structure of the Hungarian economy. The six sectors in the study represent more than 50% of the total Hungarian gross value added (in 2019 their share was 52.6%). The sample composition is a good approximate representation of the weight of each sector in the national economy.

Table I. comes about here

3.3 Measures

Independent variables. The perception-based survey module comprised five parts on key functional areas such as production and operation management, marketing and logistics, strategy, and finance. The questions were mainly asked to be answered on a five-point Likert scale by the managers interviewed. We used the variables from the executive questionnaire that were concerned with the perception of capabilities and resources and were filled out with the help of professional interviewers, thus reducing the bias of self-administration. In total, 32 variables were included in the presented analysis, supplemented by family ownership control variables in further research. Table III. presents the variables and the factors that emerged from the analysis. These variables were carefully chosen from the questionnaire from a resource and capability point of view, to determine the different configurations of competitiveness of family and nonfamily firms.

Dependent variable. The *Firm Competitiveness Index (FCI)* was first introduced by Chikán (2006, 2008), laying the foundation for resource-based view theories to measure firm-level competitiveness and its key components. The FCI "*entails both market and financial, competitive advantage (CA), which ensues from both the technical and evolutionary fitness of the firm*" (Chikán *et al*., 2022, p. 3). In our database, FCI was included as a calculated column; hence we can use and match this measure in our analysis.

Control variables. Two control variables from the survey were used to identify family firms: at least 51% of ownership is in one family's hands and one family member is actively working in the firm's management. Those that did not meet these criteria were considered nonfamily businesses. We also applied size and firm types as control variables, because we were interested in the small and medium-sized segment so we excluded large and multinational companies, along with banks, non-profit, and civil organizations.

4. Analysis and results

The statistical analysis of the data was carried out with SPSS 25. Data analysis consisted of three main steps: (1) carrying out an exploratory factor analysis to reduce the number of variables and develop homogenous factors; (2) a k-means cluster analysis of the five factors that emerged from the model based on the variables of resources and capabilities; and (3) a

cross-tab analysis of the cluster identification and the FCI to explore which cluster can be perceived as the most competitive.

4.1 Principal Component Analysis

Factor analysis was used to reduce the dimensions of the 32 variables selected. Two methodologies are distinguished in the literature within exploratory factor analysis: 1) principal component analysis (PCA) and 2) common factor analysis. In principal component analysis, factors can be assigned names (based on the component matrix). Constructing a rotated component matrix is recommended to create a more straightforward structure (Field, 2009).

The most common use of correlation coefficients arises in the KMO test, which examines the "fit" of the model. This indicates that the "*goodness of fit"* of the sample is close to excellent, with a value of *0.85.* The low significance level of the *Bartlett test* indicates that we can reject the hypothesis that the variables are independent. In addition, we calculated Cronbach's alpha for each principal component. These fell between *0.701 and 0.918*, all higher than the recommended value of 0.7, indicating that our model is suitable for principal component analysis (Hair *et al.*, 2006). The total variance shows the explanatory power of the model for variances. In our case, five components were obtained, which explained 61.2% of the total variance of the 32 variables included in the model. Since the KMO value was high and the total explanatory level was above the 60% threshold level, we considered our model suitable for this research.

Table II. comes about here

To reduce the number of variables included in the model, the PCA method resulted in five main factors with which to work. The first component – Operational capabilities – contains 11 variables. This component groups inner business process capabilities that result in the satisfaction of customer needs and efficiency. The second component is Leadership capabilities which groups also 11 variables. This component compresses variables about different management capabilities; motivational, inspirational, strategic, innovative, and problem-solving skills of the top management. The third component – Knowledge Management capabilities – compresses 4 variables. It contains capabilities for identifying, using, retaining and developing corporate knowledge. The fourth component is Transformation capabilities. which groups 3 variables. This component represents the organization's ability to change and the commitment of leaders and employees to organizational change. The fifth component – Networking capabilities contains 3 variables. This component groups information about supplier and customer relationships, managerial relationship capital and the image of the company.

4.2 Cluster Analysis - Types of Family and Nonfamily Firms

After the PCA, we performed a cluster analysis to obtain a holistic overview of which factors (resources and capabilities) firms were divided. The main goal of cluster analysis is to identify the group of members within a set that is most similar to each other, even in the case of an unknown classification (Bashfield and Aldenderfer, 1978). Two groups of clustering methods are distinguished: hierarchical and non-hierarchical classification. Hierarchical cluster analysis is usually used for smaller datasets, while for larger datasets, it is recommended to choose the k-means cluster analysis methodology (Szüle, 2016). In this study, a nonhierarchical cluster analysis of k-means was performed. The main objective of k-means cluster analysis is to identify relatively homogeneous clusters of cases along a fixed

number of groups where the value k indicates the number of sets (Lund and Ma, 2021), and the Euclidean distance shows the distance between clusters. Several methods were used to determine the ideal number of groups. We attempted to determine the ideal cluster number by calculating the cluster elbows and observing that the distribution was relatively uniform with respect to the number of elements in each cluster. We also ran a hierarchical cluster analysis to validate the ideal number of clusters. Both methods produced the same results, five groups were identified and their centres are shown in Table III.

Table III. comes about here

By saving the cluster identifiers, it is possible to examine how different each cluster is from the others in terms of other variables. To this end, relationship analyses were performed between the cluster identifier and family ownership control variable. Cross-tabulation analysis can examine the existence and strength of association between variables for two nominal, two ordinal, or one ordinal and one nominal measurement-level variable (Field, 2009). In a cross-tabulation analysis, we test the independence hypothesis between two variables and measure the strength of the association relationship when the null hypothesis (independence) is rejected. We used the *Cramer V* index to assess the association between variables, assuming a weak relationship below 0.3, a medium relationship between 0.3 and 0.7, and a strong one above 0.7. For the family ownership variable (between the control variable and the cluster identifier), the *χ2 (Chi-square*) test was performed. The test shows that $p < 0.05$, there is a significant relationship between the control variable and the cluster identifier (Table IV). Thus, the *Cramer V* indicator that measures the closeness of the relationship can be interpreted. A *Cramer V value of 0.368* indicates a *weak positive relationship* between the two variables, and the significance level also falls within the significant range of *0.05.*

Table IV. comes about here

Figure 1. shows a higher proportion of nonfamily firms professionally managed in the sample. However, the difference varies by cluster: (1) In the *Lagging capabilities* and the *Relationship-oriented* group, the proportion of *family firms is higher than nonfamily firms*, (2) in the fifth *Business-operation oriented* cluster, only two family firms can be found, (3) in the *Knowledge-based leadership cluster,* the *share of nonfamily firms is slightly higher than family firms* meanwhile in the *innovativeness and transformation-oriented* category the *share of nonfamily firms is equal to family firms*.

Figure I. and Figure II. comes about here

The cluster analysis singled out five types of organizations that show similar characteristics regarding the resources and capabilities they possess or acquire in terms of firm competitiveness.

Cluster 1: Lagging capabilities. This cluster is the largest, accounting for 27.02% of the survey population. In this group, 18 family and 12 nonfamily firms are classified. Next to the fourth cluster, is the largest group where family firms are mainly represented. Compared with the other clusters, this group has a neutral or negative value along all variables. These firms likely do not apply any formal organizational structures or managerial systems and likely

include companies that lag the others and are less consciously, most instinctively managed firms.

Cluster 2: Knowledge-based leadership. Taking up to 17.11% of the sample this cluster is the same size as the fifth group. With a distribution of 8 family and 11 nonfamily firms, this cluster shows that knowledge management within the firm, developing employees, and identifying and retaining corporate knowledge is key. These companies have little ambition to change and be innovative, meanwhile, they pay special attention to their leadership skills. This confirms that it is more characterized by a top-down strategy and the actions of the top management team and leadership and less by incremental development and bottom-up change.

Cluster 3: Innovativeness and transformation-oriented management. This cluster reached the smallest in size, with an equal distribution of 7 family and nonfamily firms. However, this cluster only includes 12.61% of the population these firms show a strong willingness to change and transform their businesses meanwhile building on their knowledge management capabilities. Although they reached a firmly adverse negative value on the other three components, meaning that these companies are less likely to be managed consciously and they look for opportunities that come along the way.

Cluster 4: Relationship-oriented management. The second largest cluster, also with 18 family firms counting for 26.12% of the sample population, this cluster shows companies that mainly rely on their networking can relationship resources and capabilities. This is no surprise since family firms are great at establishing excellent connections with suppliers, customers and partners, these companies are not characterized by resource accumulation in core processes, or business operations, rather they perceive a competitive advantage in building outstanding networks.

Cluster 5: Business operation-oriented management. With the same size as the second cluster, this group contains around 17.11% of the firms surveyed. We only found 2 family and 17 nonfamily firms in this group, making this cluster the smallest representation of family and the biggest for nonfamily firms. This cluster is considered professional, where the firms are investing significantly in their business operation skills, formalization, strategy planning, and managing customer and supplier demands. This suggests that the firms in this group are less concerned with leveraging their networking and relationship-building capabilities and more with investing in their operational excellence and exploitation. This is especially true for the core processes as the value of knowledge management capabilities is strongly negative.

4.3 Clusters and Competitiveness

We also believe evaluating the clusters from which is the most competitive in terms of resources and capabilities is worthwhile. We investigated the relationship between the FCI index value and the five final groups by comparing the means of each cluster and tested whether they were significantly different using ANOVA tables. First, we tested the concordance of variances. Based on *Levene's test (Sig. = 0.421),* we do not reject the hypothesis of equality of variances. As a function of the T-test values (*Sig. = 0.001),* we reject the equality of means and therefore accept the hypothesis that the mean of the FCI index differs between clusters. Table V. shows the value of FCI averages for the clusters:

Table V. comes about here

The relationship between the Firm Competitive Index and the cluster identifier was also measured by the *Eta squared indicator*, with a value of *0.151* which indicates a strong relationship. These results suggest that the cluster with the weakest performance is *Lagging capabilities*, and the best average performance is the *Business operation-oriented management* cluster.

5. Discussion

This paper has identified five types of family and nonfamily firms regarding different configurations of resources and capabilities: (1) "Lagging capabilities", (2) "Knowledge-based leadership", (3) "Innovativeness and transformation-oriented management," (4) "Relationship-oriented management" and (5) "Business-operation oriented management".
The findings confirm that family and nonfamily firms acquire and rely on different configurations of resources and capabilities with adverse competitiveness outcomes.

It is apparent that Hungarian small and medium-sized family firms tend to rely more on their knowledge management, networking and relationship-building capabilities, than nonfamily firms who focus more on operational and business excellence leading to different strategies to reach competitiveness. In our sample, the fifth cluster was found as the most competitive, with the least number of family, and the most nonfamily businesses.

Regarding competitiveness, it cannot be said that family firms are inherently more or less advantaged than their competitors. Of the three with the highest FCI average, the *Knowledge-based leadership* cluster has roughly the same number of family and nonfamily firms. However, while nonfamily firms are significantly over-represented in the *Business-operation-oriented* cluster, the *Relationship-oriented* cluster has a much higher share of family firms. The fact that family firms are more numerous in the *Lagging capabilities* cluster with the lowest competitiveness index than nonfamily firms and least numerous in the fifth cluster with the highest average FCI, suggests that family control has not been a definitive competitive advantage. The fact that the largest number of family businesses were represented in the "lagging" category, shows that they were less successful in focusing on either business capabilities or any other aspects of managing the company, such as building excellent relationships with their customer and partners or building strong leadership and knowledge management capabilities.
The firms in the "*Business-operation oriented"* cluster have the highest average FCI score, which supports RBV's view on the potential sources of sustainable competitive advantage. Focusing on internal professional skills and capabilities, such as distribution; branding and image; administrative processes and procedures; and product and service development, is necessary to achieve high performance. This relationship is reflected in the above-average competitive index score. It is worth noting that this cluster has the lowest standard deviation, and the high average competitiveness value is accompanied by reliable performance and stability. Since hardly any family firms are in this cluster, one might wonder whether more attention to operational activities could improve their performance.

Of particular interest is the "Relationship-oriented clusters" composition, which includes many family firms as the "Lagging capabilities". Family companies focus more on networking (relationship capital, supplier, and customer relations) and see this as the key to competitiveness. This cluster's competitive firms manage the value of networks well by focusing more on external opportunities and positioning. However, the higher standard deviation of the FCI also points out the risk of this approach. Our paper reassures previous

studies about family firms investing more longitudinally (Le Breton-Miller and Miller, 2006; Németh and Dőry, 2019) and innovatively than nonfamily firms; meanwhile, they focus more on business operational capabilities.

Another possible interpretation is based on the study by Razzak *et al.* (2021), which found that professionalization moderates and strengthens the association between family commitment and firm performance. The more family firms focus on business operational skills such as strategic planning and organizational and process development, hence the hard elements, the better corporate performance they achieve. Although from a resource-based perspective, family firms are expected to be risk-averse in professionalization as they do not want to lose control over the firm; certain elements, such as the delegation of authority, could lead to.

A further interesting explanation of the results is the dual nature of innovation in family firms. In the related cluster, family and nonfamily firms are equally represented and only reach the fourth-best value in terms of competitiveness in this sample. Many studies stated that innovation in family firms is a vital source of competitive advantage and an essential determinant of superior performance (De Massis *et al*., 2015). However, in our sample, family firms could not rely on their innovation capabilities to reach higher performance, thus leading to the conclusion that they seem only as innovative as nonfamily businesses, no better or less. This is similar to the findings of Paunović *et al*. (2023) who also found that family and nonfamily businesses are equally committed to introducing innovations in their business processes and to Csákné *et al*. (2023) who found no difference between family and nonfamily firms regarding their innovation performance in their 2017 and 2022 samples.

Theoretical Contribution

This paper has several theoretical contributions. Firstly, the study contributes to the family literature by analyzing and identifying different types of competitiveness among family and nonfamily firms from a Middle Eastern European context. Drawing on the resource-based theory of the firm, we showed that Hungarian family and nonfamily firms rely on different configurations of resources and capabilities which in our case led to a higher level of competitiveness for nonfamily businesses. A possible explanation of this could be the *familiness* aspect (Zellweger *et al*., 2010) which offers family-controlled firms a unique strategic development mindset. It requires the permanent participation of family members and a clear long-term identification. The family is central to shaping identity, and entrepreneurship is crucial to family identity. The long-term perspective, image, and stable relationships are in the middle of strategic focus, as the aim is to provide a secure background for the family, even for generations. The results of our research sample suggest that this path can also be successful and offer an alternative competitive route for family-owned firms. Although the average FCI value of the "*Relationship-oriented"* cluster is lower than that of the "Business-operation oriented" cluster, the standard deviation is higher. Some firms in this cluster have achieved markedly high FCI values, while others are more similar to laggards. A higher degree of familiness may seem desirable for the business family's identity, but in terms of financial performance, it is much less critical, similar to previous studies (see Minichilli *et al*., 2010; Frank *et al*., 2017).

Secondly, managing resources is critical to acquiring and maintaining a competitive advantage (Sirmon and Hitt, 2003). As family firms were outstanding in building networking

capabilities with their suppliers and customers, along with their most important resources, human capital can be the foundation of their competitive advantage. Our analysis shed light on the heterogeneity of family firms; those who were enlisted in the lagging group can also manage their resources efficiently if they pay special attention to alliances (Sirmon and Hitt, 2003). Building strategic relationships through alliances with partners, customers, suppliers, and even competitors in some cases can help family firms build resource bundles and achieve competitive advantage in the long run. Due to their personal relationships, family members can discover and ensure access to regional resources and business opportunities (Amato *et al*., 2023).

Practical implications

This study has confirmed that medium-sized family and nonfamily firms strive to achieve high competitiveness differently. However, this diversity does not imply that we can clearly state whether a company's family characteristics are an advantage or a disadvantage in its performance.

In our analysis, nonfamily firms reached a higher level of competitiveness as they paid more attention to business and operation management capabilities. Being more professional in that sense means a more formalized way of working. As family firms rely on distinctive resources and capabilities (Frank *et al*., 2017; Habbershon and Williams, 1999; Zellweger *et al*., 2010), they should focus on building excellent relationships with suppliers, partners and markets as other studies also found (Vlasic, 2023), invest in networking capital and developing a moderately high knowledge management base within the company. Although in our sample nonfamily firms reached a higher level of Firm Competitiveness Index, that does not mean that family firms are not competitive.

Our results also delinate the path to family business on which resources and capabilities to focus if they want to achieve a more formalized operation. They can also choose to apply different strategies and invest more in their alliance and relationship building which could also be beneficial in the long run.

6. Conclusion

This study aimed to provide a complex understanding from a resource-based aspect of how different configurations of resources and capabilities among medium-sized Hungarian family firms lead to competitiveness. By demonstrating that family and nonfamily firms rely on different sets of alignments of resources and capabilities and that family businesses consider some resources more significant than others, this research adds to the context of the family business literature based on the RBV. More precisely, this paper contributes to a contextualized understanding of different types of family and nonfamily firms, by showing that nonfamily firms could reach a higher Firm Competitiveness Index by focusing on operational excellence, delineating potential development paths for family firms. Drawing on the resource-based view our study showed that in terms of competitiveness, it is not enough for family firms to acquire strategically important resources and capabilities such as networking and knowledge management, but pioneering, mobilizing and deploying them are also essential for value creation (Sirmon *et al*., 2007).

The results of this paper have important ramifications for both theory and professional practice. This study adds to the body of research on the resource-based view in the context of family businesses by arguing that family firms similarly to their nonfamily rivals

should also invest in their operational excellence in tandem with their innovation and knowledge management capabilities, which may result in competitive advantage and a higher Firm Competitiveness Index. Our study showed that preserving the family identity is vital for family reasons, but applying professional managerial configurations is also important in terms of growth and competitiveness. Managerial skills play a critical role and have a major effect on the value creation to customers (Sirmon *et al*., 2007), and one of the biggest challenges for Hungarian family firms is to integrate external, professional managers into the management (Vajdovich *et al*., 2022) who could bring in new expertise they currently do not possess (Fabel *et al*., 2022).

7. Limitations and further research

This paper is not without limitations. The research was based on a national sample, and while we believe that the data set is a good representation of the business environment in Hungary during the study period, we do not argue that our findings are generalizable. Other countries of Middle Eastern Europe and further international expansions are potential next steps to enhance our understanding of what resources and capabilities family and nonfamily firms rely on to reach competitiveness.

The sample only contained companies with at least 50 employees, excluding small family and nonfamily forms from our analysis. It would be worthwhile to conduct a similar study among them and compare the results.

Although the Firm Competitive Index is a well-founded component that we used from a pre-defined proved dataset the composition of the index regarding resources and capabilities could be further enhanced based on previous studies (e.g., Falciola *et al*., 2020). The authors highlight the impact of several factors that are worth exploring in a future comparative analysis of the two research programs.

The competitiveness survey is only conducted every four years due to its size and volume. We used the dataset of the previous, most up-to-date database, which means that the data collection started in 2018 and was finished in 2019, just before the COVID-19 pandemic. As we looked for different configurations of family and nonfamily firms' resources and capabilities and their effect on competitiveness, we believe that the database was suitable for our research but firms can acquire and manage resources and capabilities relatively differently in four years. As evidence suggests that family and nonfamily firms handle crises differently (Santos *et al*., 2022), it would be worthwhile to conduct a comparison study when the next competitiveness study's data is available.

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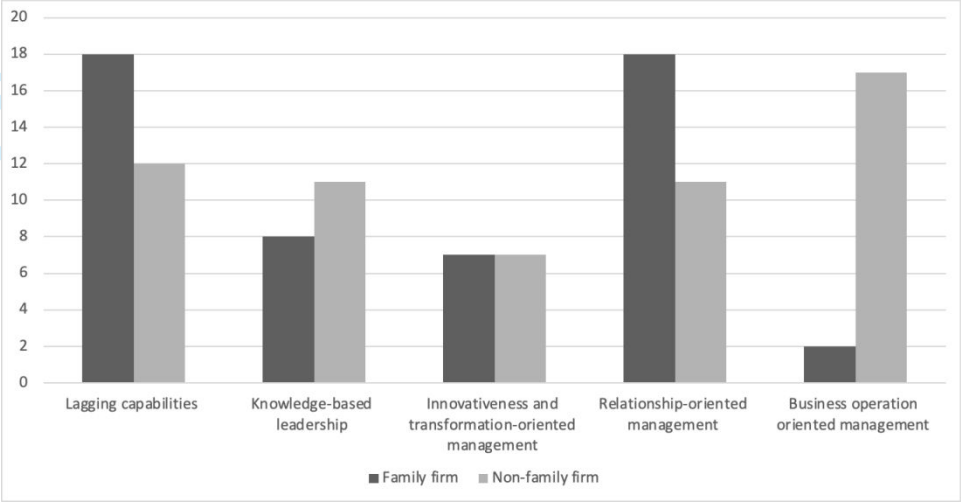
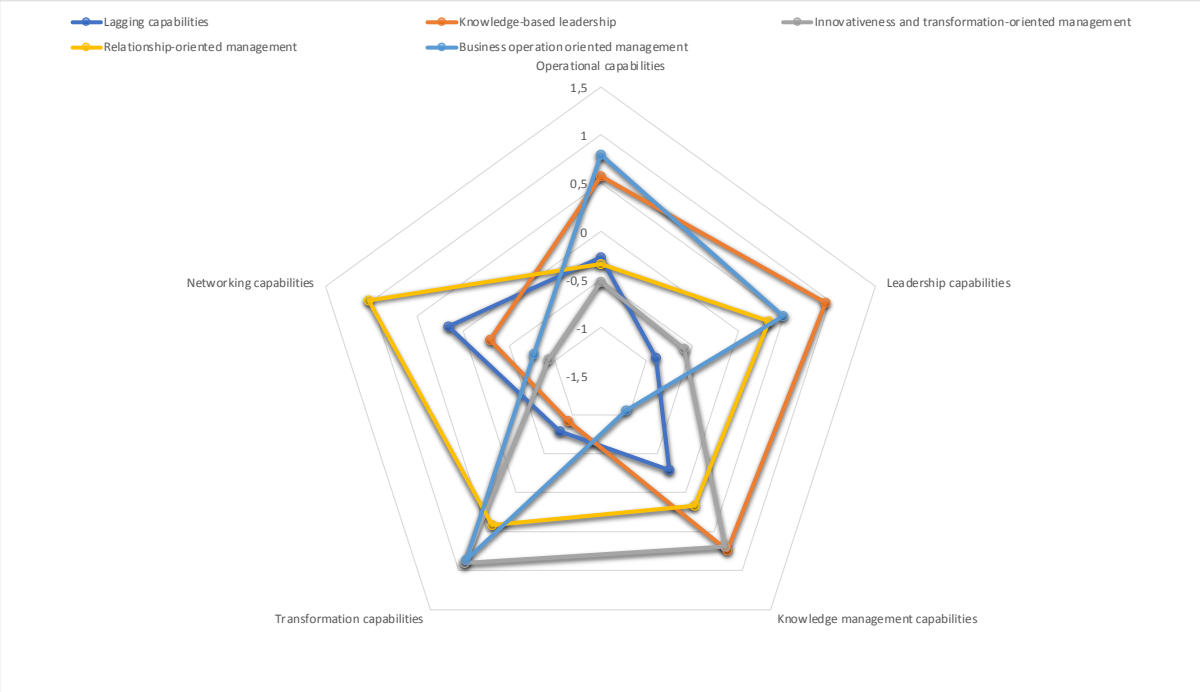
Figures

Figure 1. Distribution of family and non-family firms by clusters.



Source: own editing.

Figure 2. Dendrogram of the identified clusters.



Source: own editing..

Tables

Table I. Composition of the sample and the Hungarian economy in terms of gross-added-value.

		Frequency	Distribution in the sample (%)	Sectors' GVA contribution in 2019 (%)
	Industry	64	57.7	44.7
	Construction	11	9.9	10.9
	Wholesale and retail trade and vehicle repairing	17	15.3	19.7
	Transport and logistics	8	7.2	11.6
	Tourism, food service activities	8	7.2	3.7
	Information, communication	3	2.7	9.4
	Total	**111**	**100,0**	**52.6**

Source: Hungarian Central Statistical Office and own editing.

Table II. Exploratory factor analysis results.

Factor #	Label	Item	Factor loading	Cronbach's alpha
1	Operational capabilities	1. Administrative processes and procedural standards	.824	0.918
		2. Distribution capabilities	.800	
		3. Capabilities related to company infrastructure	.747	
		4. Corporate and brand image	.744	
		5. Logistical capabilities such as scheduling, delivering	.729	
		6. Developing various products and services	.697	
		7. Managing debts to suppliers, customers	.695	
		8. Technological capabilities	.694	
		9. The ability to manage customer orders effectively	.680	
		10. The ability to foreplan and manage the company effectively	.662	
		11. The ability to meet customer demands and customer service excellence	.616	
2	Leadership capabilities	12. The capability to work as a team	.788	0.908

		13. Network management and building relationships with partners, suppliers	.767	
		14. Expertise in technology and operation management	.758	
		15. Problem-solving capability	.754	
		16. The ability to carry out organisational developments	.695	
		17. Communication capability	.670	
		18. The ability to carry out personal trainings and developments	.645	
		19. Goal and strategy orientation	.645	
		20. Inspirational, motivational skills	.589	
		21. Strategic approach and vision	.550	
		22. Innovation capability regarding products, services, organisational development	.539	
3	Knowledge management capabilities	23. Consciously using different channels to acquire corporate knowledge	.863	0.827
		24. Having the right tools to identify corporate knowledge	.815	
		25. Developing employees is an important element of a company's HR strategy	.734	
		26. Retaining knowledge as a resource is an important corporate goal	.652	
4	Transformation capabilities	27. Committed leaders with outstanding skills	.790	0.760
		28. The organisation's ability to adapt and change	.767	
		29. Engaged employees with outstanding skills	.659	
5	Networking capabilities	30. Supplier relationships of the company	.726	0.701
		31. The relationship capital of our managers and the image of the company	.697	
		32. Customer relations of the company	.694	

Extraction Method: principal component analysis, rotation method: varimax with Kaiser Normalization. Rotation converged in 6 iterations. Source: Own editing.

Table III. The identified clusters and components.

Components/ Clusters	Lagging capabilities	Knowledge-based leadership	Innovativeness and transformation-oriented management	Relationship-oriented management	Business operation oriented management
Operational capabilities	-0.267	0.573	-0.527	-0.338	0.796
Leadership capabilities	-0.898	0.951	-0.587	0.338	0.493

Knowledge management capabilities	-0.294	0.737	0.692	0.165	-1.054
Transformation capabilities	-0.785	-0.922	0.902	0.418	0.868
Networking capabilities	0.163	-0.296	-0.936	1.031	-0.770

Source: own editing

Table IV. Examination of the relationship between the Cluster Identifier and the Family Ownership.

Symmetry indicators		**Value**	**Estimated significance level**
Nominal, nominal	Phi	0.368	0.005
	Cramer's V	0.368	0.005
Number of valid cases		111	

Source: own editing

Table V. The average value of the FCI index regarding Family and Non-Family Businesses in Final Clusters

		Firm Competitive Index (FCI)		
Clusters	**Ownership**	**Mean**	**Standard Deviation**	**Number of Firms**
Lagging capabilities	Family Business	24.061	6.232	18
	Non-Family Business	22.403	6.855	12
Knowledge-based leadership	Family Business	33.602	7.676	8
	Non-Family Business	26.931	4.765	11
Innovativeness and transformation-oriented management	Family Business	23.181	8.288	7
	Non-Family Business	29.185	8.813	7
Relationship-oriented management	Family Business	27.250	6.415	18
	Non-Family Business	32.934	5.534	11
Business operation-oriented management	Family Business	21.369	3.846	2
	Non-Family Business	33.036	3.518	17

Source: own editing.

Supplementing material regarding the Relationship between different resource and capability configurations and competitiveness - Comparative study of Hungarian family and non-family firms" paper

To present the findings transparently regarding our paper we submit descriptive data based on the report of the competitiveness database by Wimmer and Csesznák (2021). We adopt the number of tables used by the authors in the original publication to be easier to identify in case of a validity check.

In the report by Wimmer and Csesznák (2021) on the database of the Competitiveness Research Centre of Corvinus University of Budapest, chapter 3.6 presents the findings on representativity:

Table 14. Distribution of enterprises with at least one employee by size category (2018) and sample composition.

Category	Number of active enterprises	Distribution of enterprises (%)	Number of enterprises in the sample	Distribution of enterprises in the sample
below 50	1388516	99,57%	18	8,6%
50-249	4954	0,36%	159	76,1%
over 250	990	0,07%	32	15,3%
SUM	1394460	100,0	209	100,0%

Source: Wimmer and Csesznák (2021, p. 43).

Table 15. Distribution of enterprises with more than 50 employees by size category (2018) and sample composition.

Category	Number of active enterprises	Distribution of enterprises (%)	Number of enterprises in the sample	Distribution of enterprises in the sample
50-249	4954	83,3%	159	83,2%
over 250	990	16,7%	32	16,8%
SUM	5944	100,0	191	100,0%

Source: Wimmer and Csesznák (2021, p. 44).

References

Wimmer, Á. and Csesznák, A. (2021), „A hazai vállalatok versenyképességi jellemzői a negyedik ipari forradalom idején", *Budapest: Alinea Kiadó* – BCE Versenyképesség Kutató Központ. https://doi.org/10.14267/978-615-5669-49-1