ASSESSING THE ROLE OF COMPETITIVENESS ESTIMATION AS AN ADVISORY STRATEGIC FACTOR IN MANUFACTURING FIRMS: A LITERATURE REVIEW

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Abstract

Competitiveness estimation is a crucial matter both at the firm and the national level. Consequently, the justification of the factors creating a competitive advantage combining with the ways which affect them and especially in manufacturing firms hold great importance because they perform as an advisory tool for the selection of the proper strategy for them. To provide a specific framework and to study the way in which specific factors affect the competitiveness of manufacturing firms a literature review was conducted. Papers from 1967 to 2022 were selected including all the existing methodologies for competitiveness estimation (Porter's Five Diamonds and financial indexes) and their main results were presented. The main results of this work show the relationship between the variables used for the competitiveness estimation as well as the existence of the effect of different factors on it such as profitability, market share, and advertising as instruments for advice in choosing the best approach. Specifically, the effect of profitability on market share and vice versa is generally seen as well as the effect of factors such as customer satisfaction, tradition, etc.

Keywords: Competitiveness, Manufacturing Firms, Strategy, Literature Review, Financial Indexes, Porter's Diamond Model

1. INTRODUCTION

Due to its importance in determining the characteristics that enable them to survive and serve as an advisory tool for the selection of the best strategy, the notion of competitiveness has attracted a lot of interest in literature around the world. (Fischer & Schornberg, 2007; Braendle, Mozghovyi, & Huryna, 2022). Conceptually, it refers to the company's capacity to defend and uphold its position in comparison to rivals operating in the same industry (Fahmy & Ragab, 2022).

Porter (1985) defined a firm as competitive when it achieves profitability and maintains competitive advantage, while Fisher and Schornberg (2007) defined a firm's competitive position as its capacity to achieve profitability and sustain a significant market share. Kennedy et al. (1998) describe competitiveness as a metric for selecting the best strategy by offering customers safe, high-quality goods and services at a higher level than their rivals. According to Lall (2001), a company is competitive if it improves performance while keeping adequate capital. Competitiveness, according to the United Nations Conference on Trade and Development (UNCTAD, 2002), is defined as a company's capacity to boost exports, and diversify its product line using contemporary management techniques and quality insurance methods.

As regards the factors which affect competitiveness making them an advisory tool for the choice of the proper strategy they can be broadly categorized according to the industrial organization and management theory into those controlled by the government (taxes, technological and economic environment), the firm (products, strategies, technology), and those such as the demand, the external and internal environment (Sharples, 1990).

As it can be generally accepted the international literature has tried to examine the concept of competitiveness from different angles and using various measures for the determination of it (Erickson, 1995). However, there is a gap in the existing literature that this current literature review seeks to fill by examining the impact of specific economic factors on the competitiveness measures that were chosen as well as how they function as an advisory tool for businesses, particularly in the manufacturing sector. As a result, the main question that this manuscript intends to request is how certain economic factors affect firms' competitiveness guiding them to decide how to select their proper strategy.

As a result, taking into account the term's complexity and wide range of meanings, the goal of this work is to examine the way in which different factors affect competitiveness outlining the variables that affect firm competitiveness in order to serve as an advisory tool for choosing the best course of action, particularly in manufacturing firms. This considers the significance and complication of the idea of competition for the firms in relation to the great range of factors that justify them (Gamal, Wahba, & Correa, 2022).

The rest of the paper is structured as follows. Section 2 reviews the literature. Section 3 presents the main findings. Section 4 discusses the research findings. Section 5 concludes the current work.

2. LITERATURE REVIEW

2.1. A basic literature background

As mentioned in the introduction, a lot of international literature has focused on the topic of competition and has attempted to examine all of its facets (Hamdallah & Srouji, 2022). Studies looking at competitiveness can be broadly classified into two categories (Tengen, 2003). These fall under the first category, which looks at competitiveness using financial metrics like market share, profitability, exports, productivity, concentration, capital intensity, etc. The second one aims to uncover a firm's competitive potential and has Michael Porter as its primary spokesman (Pitts, Traill, & Lenihan, 1999).

In accordance with Porter's Five Diamonds, the following five elements are crucial for determining how competitive a market is: 1) "the threat posed by new competitors", 2) "the threat posed by substitutes", 3) "the bargaining power of suppliers", 4) "the bargaining power of customers", and 5) "the rivalry among current competitors".

The majority of the literature follows the model with the financial indexes and for that reason, this paper will mainly be based on these studies. Nevertheless, since Porter's model is referred to as one of the most usual ways of competitiveness estimation, below some indicative works which follow his methodology are given.

2.2. Literature review based on Porter's methodology

By including the public relations as a significant component of the competitiveness, Rugman and Verbeke (1993) added to Porter's Diamond model regarding the factors affecting the competitiveness of manufacturing organizations.

Grein and Greg's (1996) research included the gross national product (GNP), domestic investments, and exports that affect the competitiveness of manufacturing enterprises in global marketplaces taken place. Their findings revealed significant variations between developed and less developed nations in the variables affecting the competitiveness of manufacturing enterprises.

Porter's idea was fully validated by O'Shaughnessy (1997), who concluded that a country's culture, history, and traditions should be taken into account while developing and configuring a competitiveness strategy for the enterprise as well as the entire economy.

Another study using Porter's model as a basis for the competitive advantage of the manufacturing firms which belong to small economies such as Korea, and Singapore resulted that other factors such as the multi-activity should be taken into account for the creation of competitiveness models (Moon, Rugman, & Verbeke, 1998).

Alternative ways for the improvement of competitiveness through customer service were studied by Kennedy et al. (1998). From their results, it occurs that product differentiation, vertical integration between the firms and total quality management could help in this purpose.

The sources for the creation of competitive advantage in Turkey manufacturing firms based on Porter's Five Diamonds were studied by Öz (2002) resulting that Porter's theory being better applicable

in developing economies. Moreover, with the same methodology, the factors which create a competitive advantage in the economy of a country were examined, in countries such as Brazil, China, and the United Kingdom concluding that the economy of the UK has a competitive advantage compared to the other under-study economies (Stone & Ranchhod, 2006).

A model for calculating competitiveness at the national (macro) and firm (micro) levels was developed by Chikán (2008). According to his research, Porter's Five Diamonds as a methodology is a useful strategy for closing the firm-to-national level divide. Along the same line, the prerequisites for boosting the competitiveness of Chinese manufacturing enterprises were investigated, which led to the result of the adoption of innovations and the rise in competitiveness depending on the formation of clusters and networks (Zhao, Watanate, & Griffy-Brown, 2009). In addition, an attempt at the competitiveness evaluation both at the firm and national levels was made by Cetindamar and Kilitcioglu (2013), by creating a general model in which the variables governing the competition are constant across enterprises. They concluded that the three pillars of competitive performance, company resources, and managerial procedures form the basis of a firm's competitiveness and that an excellent tool for evaluating national competitiveness is the World Competitiveness Yearbook (Chikán, 2008).

In Appendix, Table A.1. presents Porter's literature synopsis.

2.3. Literature review based on financial indexes methodology

Continuing the review of the relevant studies with the second way of competitiveness estimation the most frequently seen in the literature, Comanor and Wilson (1967) looked into how advertising affects industrial organizations' ability to compete using profitability and sector concentration as competitiveness measures. They enabled industrial consolidation and the effect of advertising on profitability to significantly increase. Similarly, with Comanor and Wilson (1967), were the methodology and the results from Strickland and Weiss (1976) while in another study where market share and profitability were used as competitiveness measures in a sample of 243 manufacturing firms. Collins and Preston (1969) resulted that capital intensity has a positive effect on their competitiveness. The effect of market share on the profitability of manufacturing enterprises was also investigated by Gale (1972) who concluded that in highly competitive environments, a high market share is associated with high profitability.

The relationship between advertisement and profitability in the USA food manufacturing firms was examined by Pagoulatos and Sorensen (1981) who concluded that the profitability and concentration of manufacturing enterprises are significantly influenced by the cost of advertising and the price elasticity of demand. In addition, the result in a sample of 2287 USA manufacturing firms in which market share was used as a competitiveness measure was that is negatively influenced by the firm profitability and

the advertisement expenses (Martin, 1983). Using profitability and market share as competitiveness indicators, Jacobson and Aaker (1985) discovered that the influence of advertising on profitability and market share was positive and statistically significant, while in another study in which competitiveness was expressed as the size in the manufacturing firms determined that there is a connection between a manufacturing company's size and its capacity to achieve its objectives (Prescott, Kohli, & Venkatraman, 1986).

The relationships between profitability size and advertisement were also searched by Ornstein (1987) who concluded that in the case of simultaneous equations systems the check of endogeneity and the simultaneous correlation between the variables is essential. Moreover, using a four-simultaneous equation system with dependent variables profitability, market share, advertisement, and concentration of the sector, Zeller (1989) ended up that product differentiation contributes to the increase of concentration more than the profits. Das, Chappel, and Shughart (1993) studied 163 USA manufacturing firms and found out that advertisement and strategies for product differentiation recommend techniques for the improvement of their competitiveness. Making a comparison between the competitiveness of the USA manufacturing businesses in Canada and the USA and using profitability and market share as competitiveness metrics, Martin, Westgren, and van Duren (1993) considered that the value provided by businesses to their sales was the definition of profitability, the number of employees, and the expenses for them while the market share was calculated as the difference between exports and imports. Their findings indicated that Canadian manufacturing companies are less competitive than those in the USA.

In the same year, and using identical metrics (profitability and market share), Szymanski, Bharadwaj, and Varadarajan (1993) found that each industrial organization has distinctive characteristics that influence the link between profitability and market share. Studying the factors which influence the market share of small and medium-sized manufacturing firms in Greece, Thomadakis and Droucopoulos (1996) resulted that the change in market share is influenced negatively by the market size in contrast with capital intensity and profitability which influence positively the market share. A study conducted by Vlachvei and Oustapassidis (1997b) searched for the relationships between concentration profitability and advertising in a sample of 38 Greek manufacturing enterprises. They concluded that economies of scale drive concentration while profitability and advertisement both influence profitability.

Similarly, using profitability as a competitiveness measure and with the help of panel data, Haskel and Scaramozzino (1997) studied the effect of certain factors on profitability and as a result on competitiveness. Their findings showed that market share and other elements like capital intensity and leverage have an impact on profitability. The size of manufacturing enterprises has a negative impact on productivity, although their age has a positive impact on it, according to Majumdar (1997), who used productivity as a measure of competitiveness.

Using panel data, McDonald (1999) came to the conclusion that lagged profitability is fundamental for competitiveness, but the impact of market share on profitability varies on the econometric approach taken.

Using the ordinary least squares (OLS) approach, Bhattacharya and Bloch (2000) discovered indicates while market share and profitability have a positive and statistically insignificant association, capital intensity and operating years have a positive and statistically significant link with profitability.

The way how fifty-one (51) Spanish manufacturing and agricultural enterprises' competitiveness was affected by environmentally friendly policies was investigated by Galdeano-Gomez and Céspedes-Lorente (2004). By using profitability, market share, and the cost of the environmental measures as dependent variables, they concluded that the amount of investment and the implementation of environmentally friendly measures have a favorable impact on the competitiveness of the manufacturing enterprises under consideration. In the same year 2004, the analysis of the disparities in profitability between Greek food and beverage manufacturing companies and the pertinent ones that serve as Greek subsidiaries of international corporations showed that although the profitability of the relevant Greek enterprises depends on product differentiation and research and development (R&D) expenditure, the local operations of multinational organizations depend on market share, local market expertise, and advertising (Anastassopoulos, 2004).

With the creation of a set of four equations with dependent variables profitability, market share, and productivity and by also combining numerous competition theories, Fischer and Schornberg (2007) found that the beverage industry became more competitive between 1995 and 2002, and the UK's industries were the most competitive in the then-15-member European Union. Within the 2002–2007 period, each country's competitiveness in the food and beverage industries varied significantly from one another and was significantly influenced by its geographic location (Notta, Vlachvei, & Samathrakis, 2010). A competitive food business, according to Mattas and Tsakiridou (2010), not only gives customers access to safe and high-quality food but may also boost employment and the entire supply chain, which helps the entire national economy from producers to consumers.

Examining productivity as an important competitiveness factor, Laureti and Viviani (2010) found that productivity has a substantial impact on the competitiveness of all segments of this Italian industry after evaluating the influence of several economic factors on the competitiveness of the Italian food industry. In their study, Crescimanno, Galati, and Bal (2014) evaluated whether and how much the global financial crisis affected the agro-food industry's competitiveness in many Mediterranean countries, including France, Italy, Spain, Turkey, and Italy. The results show that the economic crisis has made the agro-food sector less competitive in all of the countries under consideration, though less so in Turkey, the country with the lowest per capita income.

Continuing with the food industry, Wijnands, van Berkum, and Verhoog (2015) assessed the competitiveness of the Swiss food industry using metrics such as profitability, a range of trade indicators, and the achievement of competitive advantage. Their findings suggest that establishing a competitive advantage may be the most important factor in raising a food industry's competitiveness with the rest of the region's understudied industries (Konstantinidis, Aggelopoulos, Tsiouni, & Rizopoulou, 2021).

In their assessment of the competitiveness of the Polish food industry, Firlej, Kowalska, and Piwowar (2017) considered exports, the import-export balance, and the adoption of innovations as criteria. Their findings show that implementing innovations increases the competitive advantage of the country's food business. Consumer happiness and corporate competitiveness are fueled by the acceptance and implementation of innovations as well as the creation of diversified products, according to Harvey, Hubbard, Gorton, and Tocco's (2017) examination of the competitiveness of the agro-food industry in the 27-member European Union.

Aiming to investigate the competitiveness of the Italian manufacturing industry in order to develop a global index of regional manufacturing industry competitiveness, Vrontis, Tardivo, Bresciani, and Viassone (2018) found that there is significant regional heterogeneity, also highlighting how Italy's industrial sector is dependent on a small number of systems that are intensely competitive on a regional level (Konstantinidis et al., 2021). In another study where the effect of consumer happiness, product knowledge, business compliance with all regulatory requirements, and other relevant factors on the competitiveness of the food industry was examined, Suchánek and Králová (2019), concluded that the quality of the products and reliable customer information are the main factors determining the competitiveness of the food industry.

In Napa Valley, one of the top 100 vacation destinations, online branding was found as a useful instrument for providing competitive advice for wine tourism (Scorrano, Fait, Maizaa, & Vrontis, 2019). Additionally, Iaia et al. (2019) found that family business communication traits contributed to their competitiveness when compared to non-family businesses in the wine market. Their findings showed that the ownership structure is a key determinant of the firm's communication process (Konstantinidis et al., 2021).

In the research whose goal was to examine the impact of R&D and information technology on the performance of innovation in Greek small and medium manufacturing enterprises, Tsoukatos Psimarni-Voulgaris, Lemonakis, and Vassakis (2019) concluded that while quality management initiatives did have an impact on firm innovation performance, R&D efforts did not. According to Petropoulos (2019), who examined the sector's competitiveness and compared it to a comparable European one, the competitiveness of the Greek food and beverage industry may be strengthened by strengthening the human resources and their credentials, knowledge, experience, and skills (Konstantinidis et al., 2021).

Exports increased and small and medium-sized enterprises expanded as a result of Ragimun and Widodo's (2019) efforts to develop strategies for improving the competitiveness of Indonesia's food

and beverage industry. In order to increase the competitiveness of the food industry, innovation models must be developed (Birgliadi, Ferraro, Filippelli, & Galati, 2020).

In a literature review study on cause-related marketing and its implications on competitiveness, Vrontis, Christofi, and Katsikeas (2020) discovered that cause-related marketing, in addition to other factors like brand awareness and innovation, provides a strategy for boosting global competitiveness. In an analysis of the variables affecting the competitiveness of manufacturing firms, where all of the following factors were taken into account such as the size of the business, the level of competition, the number of suppliers and customers, the evaluation of the dynamics of cooperation with suppliers and customers over the previous five years, and the characteristics of demand for the business's products was found that there are comparatively more competitive organizations than those who have maintained their relationships throughout the previous five years. Furthermore, there are more businesses that exhibit poor levels of competitiveness among those whose relationships with suppliers have worsened recently (Kuzminski, Jalowiec, Masloch, Wojtaszek, & Miciula, 2020).

Last but not least, Chikán, Czakó, Kiss-Dobronyi, and Losonci (2022) linked the competitiveness of businesses from the perspectives of operations and strategic management. They investigated the Hungarian manufacturing industry using a resource-based view (RBV) of the business, or RBV theories, and the measure of the firm competitiveness index. The findings show that whereas regular production capabilities are not significantly connected with firm-level competitiveness, dynamic production capabilities are.

In the Appendix, in Table A.2, the manuscripts mentioned in the methodology of financial indexes works are summarized.

Concluding with the literature review section it is verified and generally accepted the complexity of the term competitiveness as well as the large number of indexes that have been used for its estimation. The effect of these specific factors plays an important role because as referred to above, they perform as advisory tools for the selection of the proper strategies which the firms may follow.

3. MAIN FINDINGS

Starting with a small part of existing literature that concerns Porter's theory, more specifically ten (10) papers, the researchers who used his methodology verified his theory as regards the factors which influence the competitiveness of manufacturing firms. In addition, they found that there are also other factors that influence competitiveness such as product differentiation, customer satisfaction, a tradition of a country, public relationships, and vertical integration of the firms.

As regards the second part of this present literature review which refers to competitiveness estimation mainly with financial indexes (40 papers), a great part of the literature used as competitiveness measures profitability and market share, adding in some cases indexes such as productivity, exports, concentration, etc. The tendency to find a positive and statistically significant relationship between

market share and profitability and vice versa may be attributable to manufacturing companies' intentions to choose strategies aiming to increase their market share and also invest their profits for the achievement of their goal. Advertising is a useful tool for enhancing firm competitiveness since it frequently has a positive and statistically significant influence on both market share and profitability. Another important goal for the under-study manufacturing firms according to the existing literature for the stimulation of competitiveness is the high concentration of their sales. The high concentration of a firm may be characterized as a strategy that intends to form market conditions creating oligopolies, monopolies, and generally entry barriers to the entrance of new firms. Also, a proper strategy for competitiveness stimulation was found which is product differentiation. Its implementation may result in better customer satisfaction and also in the creation of a well-known brand name which found as a very important factor in sectors such as wine manufacturing firms.

Moreover, the importance and effect on the competitiveness of factors such as leverage, operating years, etc. depends on the method used and varies accordingly to the sector and its characteristics to which the firm may belong.

Summarizing the number of works which is presented in this literature review it can be seen that there are 10 papers (20%) based on Porter's methodology, while 40 papers (80%) are referred to financial indexes. Observing the years, and more specifically the first year which the first work mentioned, it is the year 1967, while the last one is the current year 2022. Regarding the distribution over the years, a relative uniformity is observed which means that the specific topic is constantly studied and concerns researchers. The geographical regions to which the works are referred are presented in Table 1 and Table 2 which follow below.

Table 1. Number of studies per continent

Country/Region	No. of studies
EU	19
America	21
Asia	10
Total	50

Table 2. Number of studies per country

Country/Region	No. of studies
The USA	20
Brazil	1
Turkey	4
Greece	7
Italy	2
China	2
Korea and Singapore	1
The UK	2
India	1
Spain	1
EU (as a whole)	2
Switzerland	1
Poland	2
Cyprus	2
Indonesia	2
Total	50

In addition, the top ten cited in Google scholar papers as well as the citations per year (CPY) are presented in Table 3 and Table 4 below.

Table 3. Top ten cited papers (based on Google Scholar)

Paper	Paper conclusions	Citations
Majumdar (1997)	The size of a firm has a negative impact on productivity in contrast with age.	757
Szymanski et al. (1993)	The link between profitability and market share has special characteristics.	654
Moon et al. (1998)	Multiactivity is a special factor for competitiveness models.	564
Chikán (2008)	Porter's methodology fills the gap between the micro and macro level.	263
Martin et al. (1993)	Profitability has a negative influence on market share	204
Öz (2002)	Porter's method is better applicated in developing economies.	146
Wijnands et al. (2015)	Competitive advantage is the most important factor for firms.	145
Sharples (1990)	External and internal factors justify competitiveness.	114
Zhao et al. (2009)	Clusters and networks are crucial factors for enhancing competitiveness.	85
Erickson (1995)	Various methods to determine competitiveness.	80

Table 4. Citations per year (CPY) of top ten cited papers (based on Google Scholar)

Paper	Paper conclusions	CPY
Majumdar (1997)	The size of a firm has a negative impact on productivity in contrast with age.	30,30
Szymanski et al. (1993)	The link between profitability and market share has special characteristics.	29,72
Chikán (2008)	Porter's methodology fills the gap between the micro and macro level.	29,22
Moon et al. (1998)	Multiactivity is a special factor for competitiveness models.	25,63
Öz (2002)	Porter's method is better applicated in developing economies.	7,3
Wijnands et al. (2015)	Competitive advantage is the most important factor for firms.	7,25
Martin et al. (1993)	Profitability has a negative influence on market share.	6,58
Zhao et al. (2009)	Clusters and networks are crucial factors for enhancing competitiveness.	6,53
Sharples (1990)	External and internal factors justify competitiveness.	3,56
Erickson (1995)	Various methods to determine competitiveness.	2,96

4. DISCUSSION

Summing up the current literature review verifies that competitiveness is a complex concept and at the same time has a crucial importance not only for the manufacturing firms but for all the firms because it serves as a consultative tool for choosing the appropriate course of action that should be taken in connection with other studies, such as Fischer and Schornberg (2007), Abdulayev (2022), and Chikán et al. (2022). The application of the proper strategy of a firm determines at a high level its presence in the market and from a general point of view its ability to survive. For that reason the estimation of economic factors such as profitability, market share, productivity, and advertisement which affect and justify the competitiveness account the most, which is in line with other studies such as Notta et al. (2010), Vrontis et al. (2020), Chikán et al. (2022). Also, the existence of high or low concentrations in a market referring to the market share constitutes a crucial factor for selecting the best strategy for businesses.

According to its sales, a company's size appears to be a crucial component in its ability to compete and grow its earnings. For this reason, as discussed in this paper, one of the main objectives of manufacturing companies is to invest earnings in growing their market share. On the other hand, smaller businesses with a lesser market share are urged to develop the right strategy in order to compete with larger businesses.

As was noted in the literature review section and is also suggested as a potential future angle, the development of clusters and networks may represent an alternate method for these businesses to boost their market power and competitiveness. The way with the manufacturing firms in Greece may succeed in this goal and the condition under which it can perform as an advisory tool for the improvement of their competitiveness constitutes the next research work for the authors of this current paper.

5. CONCLUSION

Due to both its complexity and its great importance for the survival of the firms and especially manufacturing firms, competitiveness has covered a great part of the international literature which has tried to determine it and justify the factors which affect it, serving now as an effective advice tool for choosing the best plan for them. This paper's objective was to review the literature in this context, more specifically on a significant number of publications that examined competitiveness including both the two main ways of its estimation and how various economic factors affect it, performing as an advisory tool for the selection of their proper strategy. According to the findings, parameters including market share, profitability, concentration, exports, advertising, etc., have an impact on competitiveness and work as a tool for choosing the best strategy for them.

In addition, the size of firms and especially manufacturing firms constitutes an important factor for the decision of their strategy because larger firms' entry barriers in smaller ones try to exclude them from the market sustaining their market share. For this reason, these businesses use their revenues to grow their market share to monopolize or oligopolize the industry. As a result, the development of clusters and networks made up of smaller businesses may be the best course of action for solving this issue and ensuring the existence of these firms.

This fact holds great importance both for academics and especially policymakers because the framework that the proposed clusters and networks may perform will play an important role in their survival as a whole. Aside from that, the approach that these businesses may take will have substantial implications for policy makers given that related to the applicable legal framework one of the contributions of which is the present examination.

The fact that in Porter's methodology only a small part of the literature is presented may be a limitation of this research. Nevertheless, the fact that the results presented here not only verify but also extend Porter's methodology gives the ability to have safe results connected to this methodology.

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APPENDIX

Table A.1. Papers based on Porter's methodology

Papers	*Methodology*	*Main results in brief*
Rugman and Verbeke (1993)	Porter's Diamond	Public relationships influence competitiveness.
Grein and Greg (1996)	Porter's Diamond	Significant variations between developed and less developed countries.
O'Shaughnessy (1997)	Porter's Diamond	Tradition, culture of a country.
Moon et al. (1998)	Porter's Diamond	Factors such as multi-activity.
Kennedy et al. (1998)	Porter's Diamond	Product differentiation and vertical integration.
Öz (2002)	Porter's Diamond	Better applicable in developing economies.
Stone and Ranchhod (2006)	Porter's Diamond	The UK is more competitive than Brazil and China.
Chikán (2008)	Porter's Diamond	Porter's methodology is suitable to fill the gap between the micro and macro level.
Zhao et al. (2009)	Porter's Diamond	Clusters and networks are important for competitiveness.
Cetindamar and Kilitcioglu (2013)	Porter's Diamond	Competitive performance, company resources, and managerial procedures form the basis of a firm's competitiveness.

Table A.2. Papers estimated competitiveness with financial indexes

Papers	*Methodology*	*Main results in brief*
Comanor and Wilson (1967)	Financial indexes	Advertising increase profitability.
Strickland and Weiss (1976)		
Pagoulatos and Sorensen (1981)		
Jacobson and Aaker (1985)		
Collins and Preston (1976)	Financial indexes	Capital intensity affects competitiveness.
Gale (1972)	Financial indexes	A high market share is associated with high profitability.
Martin (1983)	Financial indexes	Market share is negatively affected by profitability.
Prescott et al. (1986)	Financial indexes	The size of a company helps its objectives.
Ornstein (1987)	Financial indexes	Endogeneity and simultaneous estimation are essential.
Zeller (1989)	Financial indexes	Product differentiation increases concentration.
Das et al. (1993)	Financial indexes	Advertisement improves competitiveness.
Martin et al. (1993)	Financial indexes	Canadian manufacturing firms are less competitive than the USA ones.
Szymanski et al. (1993)	Financial indexes	Concentration influences profitability and market share.
Thomadakis and Droucopoulos (1996)	Financial indexes	Market influences negatively market share.
Vlachvei and Oustapassidis (1997)	Financial indexes	Advertisements and other factors influence profitability.
Haskel and Scharamozzino (1997)		
Majumdar (1997)	Financial indexes	Productivity as a competitiveness measure.
McDonald (1999)	Financial indexes	The impact of market share on profitability varies on the method used.
Bhattacharya and Bloch (2000)	Financial indexes	Capital intensity and operating years have a positive and statistically significant link with profitability.
Galdeano-Gomez and Céspedes-Lorente (2004)	Financial indexes	Environmental friendly measures and R&D influence positively profitability.
Anastassopoulos (2004)		
Fischer and Schornberg (2007)	Financial indexes	EU's competitiveness is higher in the EU of 15.
Notta et al. (2010)	Financial indexes	Geographical location and food quality affect competitiveness.
Mattas and Tsakiridou (2010)		
Laureti and Viviani (2010)	Financial indexes	Productivity influences competitiveness.
Crescimanno et al. (2014)	Financial indexes	The agro-food industry is less competitive in Mediterranean countries.
Wijnands et al. (2015)	Financial indexes	Competitive advantage, innovation, and customer's satisfaction improve competitiveness.
Harvey et al. (2017)		
Firlej et al. (2017)		
Vrontis et al. (2018)	Financial indexes	Cause-related marketing and competitive advantage increase competition.
Vrontis et al. (2020)		
Suchánek and Králová (2019)	Financial indexes	Quality, online branding, and ownership structure are key determinants of competitiveness.
Iaia et al. (2019)		
Scorrano et al. (2019)		
Tsoukatos et al. (2019)	Financial indexes	Management and human resources improve competitiveness.
Petropoulos (2019)		
Ragimun and Widodo (2019)		
Birgliadi et al. (2020)	Financial indexes	Innovation and strategic management improve competitiveness.
Kuzminski et al. (2020)		
Chikán et al. (2022)		