

# COMPETITIVENESS AND FINANCIAL RELATIONS IN THE GREEK BOTTLED WATER MANUFACTURING FIRMS

Christos Konstantinidis<sup>\*</sup>, Maria Tsiouni<sup>\*\*</sup>, Sofia Kourtesi<sup>\*\*\*</sup>,  
Ioannis Katrakyliadis<sup>\*\*\*\*</sup>

<sup>\*</sup> Corresponding author, Department of Business Administration, International Hellenic University, Serres, Greece

Contact details: International Hellenic University, End of Magnesias str., Serres 62100, Greece

<sup>\*\*</sup> Department of Agriculture, International Hellenic University, Thessaloniki, Greece

<sup>\*\*\*</sup> Department of Economics, International Hellenic University, Serres, Greece

<sup>\*\*\*\*</sup> Department of Business Administration, International Hellenic University, Serres, Greece



## Abstract

**How to cite this paper:** Konstantinidis, C., Tsiouni, M., Kourtesi, S., & Katrakyliadis, I. (2022). Competitiveness and financial relations in the Greek bottled water manufacturing firms [Special issue]. *Journal of Governance & Regulation*, 11(4), 347–353. <https://doi.org/10.22495/jgrv11i4siart15>

Copyright © 2022 The Authors

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). <https://creativecommons.org/licenses/by/4.0/>

**ISSN Print:** 2220-9352  
**ISSN Online:** 2306-6784

**Received:** 10.08.2022  
**Accepted:** 09.12.2022

**JEL Classification:** C3, D4, L66  
**DOI:** 10.22495/jgrv11i4siart15

The bottled water sector in Greece exhibits particular characteristics. After a downturn caused by the COVID-19 pandemic, investments are being made and strategic partnerships are developing, aiming both to increase their competitiveness and to choose the proper strategy for their development. On the other hand, competitiveness is a concept widely used and for that reason has occupied the literature a lot (Fischer & Schornberg, 2007). As a result, it holds great importance to identify and assess the factors that affect competitiveness, performing as a tool for the choice of the proper strategy (Chikán, Czakó, Kiss-Dobronyi, & Losonci, 2022). Of the two main ways for the competitiveness estimation, one with Michael Porter's diamond and the other one with the use of financial indexes, the second one was selected for this paper. All the Greek bottled water manufacturing firms which published their annual balance sheets for the 2016–2020 period were studied and used for the creation of variables. Several economic parameters are studied to determine competitiveness, where market share and profitability account for the most. According to the results, profits, sales, and loans contribute significantly to competitiveness, playing a major role in the determination of strategies that specific firms may follow.

**Keywords:** Competitiveness, Profitability, Market Share, Greece, Bottled Water Manufacturing Companies

**Authors' individual contribution:** Conceptualization — C.K.; Methodology — C.K.; Formal Analysis — M.T.; Investigation — S.K. Writing — Original Draft — C.K. and M.T.; Writing — Review & Editing — M.T. and I.K.; Supervision — C.K.

**Declaration of conflicting interests:** The Authors declare that there is no conflict of interest.

## 1. INTRODUCTION

In Greece, the bottled water sector has special characteristics dominated by large companies with organized and extensive distribution networks. Small and medium-sized businesses with extensive distribution networks throughout the country are also active, as well as companies with mainly local origins. The same happens in other Mediterranean countries such as Italy where the creation of clusters and networks from small and medium size

companies is proposed as a proper strategy for the improvement of their competitiveness (Bargoni, Bertoldi, Giachino, & Santoro, 2022).

The bottled water sector in Greece is fast-growing and holds a significant share of the market. Due to the COVID-19 pandemic, restaurants remain closed for a long time, and tourism is also at low levels, however, the sector's sales showed an 8% increase in 2021 compared to the previous year, which prompted strong market players to invest (ICAP, 2021).

In particular, the VIKOS Company, which according to Nielsen data presented a growth rate of 17.7% through a growth rate of 5.8% in its bottled water volume in supermarkets, has invested 22 million euros in the construction of a new unit manufacturing and bottling plant with two new production lines. A share of 17.4% is achieved by the VIKOS brand in terms of sales volume for the same period when 17.4% is the share with two other competing companies within the same geographic region and 29.6% is the share held by private label water. CHITOS Company has secured two very important deals after its strategic collaboration with Danone Waters one of the world's largest bottlers of water by taking over the distribution of the *Green Cola Hellas* portfolio and at the same time acquiring the exclusive distribution, marketing, and franchising rights to *Evian* and *Ferarrelle* products.

To meet domestic and international demand for natural mineral water, THEONI Company announced an investment of 10 million euros to create a new production line and a new logistics center. LUX MARLAFEKAS, a Greek company, recently acquired 42.34% of DIRPY, a bottled water producer. The acquisition ensured the company's entry into the bottled water market. Furthermore, the PEPSICO HELLAS group and NU AQUA are planning to invest 20 million euros into a strategic partnership that, in its full development, will total 55 million euros, with the aim of re-starting the flagship mineral water production and bottling plant in Loutraki, Corinthia (Foundation for Economic and Industrial Research, 2020, pp. 13-14).

On the other hand, competitiveness is a concept widely used and difficult to be measured accurately (Fischer & Schornberg, 2007). Moreover, how the firms belonging to different sectors try and succeed to survive varies and differs taking into account different factors (Chikán, Czakó, Kiss-Dobronyi, & Losonci, 2022). The same happens with the methods which also the firms of different sectors use to select the proper strategy aiming to increase their competitiveness.

Taking into account this under-construction investment framework which creates competitiveness conditions in the bottled water manufacturing sector, this paper aims to study the effect of certain economic factors on the competitiveness of the Greek bottled water manufacturing firms after the COVID-19 pandemic period, covering the existing gap in the literature for the specific sector and holding special importance for both academics and policymakers at the same time.

A study of the most important bottled water manufacturing companies is intended to provide insight into how to improve their competitiveness and gain access to the opportunities this sector faces. Such a study seeks to connect significant constructs which influence the financial performance of firms positively by identifying its focalized variables. Based on the high market value and perceived emptiness in exploratory research, this research needs to focus on describing a significant construct in bottled water manufacturing companies. This research contributes to the field in a variety of ways. Firstly, illustrate how operational impact impacts financial performance. As a second step, demonstrate

the connection between competitive environments and operational performance. Third, show how the competitiveness of the industry affects financial performance. The results of our analysis will be followed by contextual conclusions based on significant results. The novelty of this study is that examines the relationship between profitability, market share, financial factors, and competitiveness and incorporates them into a whole model. Moreover, it is the first research that studies bottled water manufacturing companies in Greece. It is also the period of the study that makes the study valuable. As a result of the worldwide depressionary economic conditions and the strong competitiveness resulting from globalization, as well as the severe Greek economic crisis, the underlying forces underlying the successful performance and competitiveness of Greek bottled water firms have changed.

The structure of this paper is as follows. Section 2 reviews the relevant literature. Section 3 presents the research methodology while in Section 4 the results are presented. Section 5 continues with the discussion while Section 6 closes with the conclusions.

## 2. LITERATURE REVIEW

International literature and researchers have extensively addressed the concept of competitiveness (Fischer & Schornberg, 2007). During the recent COVID-19 health crisis, the fluidity of the economy and business environment has forced all participants (academics, entrepreneurs, and managers) to find ways to differentiate themselves from their competitors through innovation (Vrontis & Cristofi, 2021). A five-factor model of competitiveness, as defined by Porter (1985), involves the threat of entry by a new competitor, the threat of substitute products, the bargaining power of suppliers and buyers, and the existing level of competition. Chikán (2008) developed a model for assessing micro- and macro-economic competitiveness, concluding that Porter's forces are a useful tool for determining competitiveness and filling the gap between them. Based on a similar methodology to Chikán (2008), Cetindamar and Kilitcioglu (2013) developed a common model at both the micro and macro levels that identify factors that affect competitiveness. According to the authors, managerial processes, competitive performance, and firm resources all affect competitiveness. A competitiveness yearbook is a useful tool at the national level.

Competitiveness is defined by Fischer and Schornberg (2007) as profitability, productivity, and market share. During the period 1995-2002, they studied the beverage industry in the United Kingdom (UK), and they concluded that it was the most competitive industry and that the UK has the most competitive industry in the European Union (EU) of 15 member states in terms of profitability, productivity, and market share. As we return to the beverage industry, focusing specifically on the wine sector, the brand is found to be an important determinant of competitiveness (Scorrano, Fait, Maizaa, & Vrontis, 2019). Similarly, for winemaking enterprises, ownership status, structure as well as communication techniques are

important factors of competitiveness (Iaia et al., 2019). Another factor contributing to a country's market competitiveness is its geographical location (Notta, Vlachvei, & Samathrakakis, 2010). During the period 2002–2007, the competitiveness of the food and beverage sectors differs widely between EU member countries, mainly determined by geographic location. Food safety and quality not only determine competitiveness but also the entire distribution network from the producer to the consumer (Mattas & Tsakiridou, 2010).

In the Italian food industry, productivity is an important determinant of competitiveness (Laureti & Viviani, 2011). According to Crescimanno, Galati, and Bal (2014), the smallest decline in competitiveness since the economic crisis occurred in Turkey, the country with the lowest per capita income, among countries such as Spain, Turkey, and Italy. According to Harvey, Hubbard, Gorton, and Tocco (2017), innovation and its application as well as the production of differentiated products stimulate competitiveness in the sector contrary to Crescimanno et al. (2014).

Using various commercial indicators as well as a competitive advantage to determine competitiveness and profitability in the food industry, Wijnands, van Berkum, and Verhoog (2015) concluded that achieving a competitive advantage is the most important success factor. A positive trade balance, exports, as well as the adoption and implementation of innovations, are also considered determining factors in achieving a competitive advantage in the Polish food industry by Firlej, Kowalska, and Piowar (2017). Suchánek and Králová (2019) claim that consumer satisfaction, adequate product information, and business compliance with existing regulations determine, and stimulate the food industry's competitiveness.

Greek food and beverage industry competitiveness is also influenced by human resource management and training (Petropoulos, 2019). The increase in exports has been viewed by Ragimun and Widodo (2019) as the most effective strategy to stimulate the competitiveness of the Indonesian food industry, as well as Birgliadi, Ferraro, Filippeli, and Galati (2020) in the adoption of new technologies.

According to Tsoukatos, Psimarni-Voulgaris, Lemonakis, and Vassakis (2017), implementing quality management programs strengthens the competitiveness of manufacturing companies in Greece more than developing research and development actions. Additionally, Vrontis, Tardivo, Bresciani, and Viassone (2018) developed a global index of regional competitiveness for Italian manufacturing companies. As a result of their research, they noted a high degree of heterogeneity among regions, emphasizing the fact that Italian manufacturing is largely dependent on a few highly competitive regional systems. Furthermore, Vrontis, Christofi, and Katsikeas (2020) in a literature review on cause-related marketing and its implications on competitiveness concluded that many factors, including cause-related marketing (CRM), can contribute to international competitiveness apart from factors such as brand name and innovation. Zanotti, Reyes, and Fernandez (2018) studied the relationship between competitiveness and the operational and financial performance of

the brewing industry. A confirmatory and exploratory factor analysis was selected as the method of study and then, structural equation modeling was applied. More than 12 European economies were represented by 214 brewery firms. According to the study, the competitive construct of the industry is significantly related to financial performance, but not necessarily to operational performance. The operational structure of a firm does not necessarily correlate with its financial performance.

Kuzminski, Jalowiec, Masloch, Wojtaszek, and Miciula (2020) analyzed the factors that influence the competitiveness of manufacturing companies. The factors analyzed were the following: company size, level of competition, number of suppliers, number of customers, assessment of the dynamics of cooperation with suppliers and customers over the past five years, and characteristics of demand for the company's products. Based on the results, there are relatively more companies that are rather competitive than those that have kept their relations unchanged over the last five years. Furthermore, among companies that have deteriorated their relations with suppliers in recent years, there is one that appears to be at low competitiveness levels.

In another study, Chikán, Czakó, Kiss-Dobronyi, and Losonci (2022) connected the competitiveness of firms from a strategic management perspective and the viewpoint of operations. With the use of a resource-based view of the firm, popularly called RBV theories and the measure of the Firm Competitiveness Index (FCI) they studied the Hungarian manufacturing sector. The results demonstrate that dynamic production capabilities are positively correlated with firm-level competitiveness, but ordinary production capabilities are not significantly related. Moreover, Bargoni et al. (2022) found that one proper strategy for the improvement of competitiveness in the agro-industry firms in Italy is the creation of clusters and networks between small and medium size ones of them.

Moreover, according to the theory of industrial organization and after its application in various research, the findings support the concept that profitability and market share can be considered composite competitiveness indices (Tirole, 1988). Competitive firms are profitable while gaining market share. Through new investments, profitable firms can expand their fixed assets and increase their market share. Moreover, the size of the firms is a significant factor the competitiveness. Large-scale operations achieve lower costs and can compete at lower prices in the market share (Voulgaris & Lemonakis, 2014).

As a conclusion to the literature review and because this study involves a branch of the Greek food and beverage industry that appears to be relatively competitive after the COVID-19 pandemic, the following section determines the equation of competitiveness as well as evaluates its usefulness both at a business and an academic level.

### 3. RESEARCH METHODOLOGY

In the present work, competitiveness is defined as the ability of the firm to achieve high profits and maintain a high market share (Fischer &

Schornerberg, 2007). According to the definition above, there are two indicators of competitiveness that arise and can be used to measure it, profitability and market share. So it is clearly stated that the methodology used in this work for the competitiveness estimation is the use of financial indexes instead of Michael Porter's five diamonds which is an alternative method. Shortly according to Porter's (1985) theory and methodology competitiveness should be estimated by taking into consideration factors such as the threat of entry by a new competitor, the threat of substitute products, the bargaining power of suppliers and buyers, and the existing level of competition.

According to Scherer and Ross (1990) and other previous works (Levy, 1986; Geroski & Jacquemin, 1988; Bhattacharya & Bloch, 2000), both profitability and market share are adjusted to a long-run equilibrium level as a result of various factors which affect them and also affect a company's entry conditions in industry. So both profitability and market share can be described through a partial adjustment mechanism (McDonald, 1999).

The general form of a partial adaptation model is as follows:

$$Y_t^* = a_0 + a_1x_t + u_t \quad (1)$$

$$Y_t - Y_{t-1} = \lambda(y_t^* - y_{t-1}), \text{ with } 0 < \lambda < 1 \quad (2)$$

where,  $y$  is the variable in question, while  $y^*$  is the desired level of  $y$ . Substituting  $y^*$  in equation (2), the equation takes the following form.

$$Y_t = a_0\lambda + (1 - k)y_{t-1} + \lambda a_1x_t + lu_t \quad (3)$$

According to previous studies (Tong & Saladrignes, 2022; Susilo, Wahyudi, & Pangestuti, 2020; Vlachvei & Oustapassidis, 1998; Notta & Vlachvei, 2010), profitability is influenced by various factors including market share, capital intensity, and price elasticity. Further, taking into account the partial adjustment mechanism of profitability, the profitability equation can be written as follows:

$$PNP_t = a_0 + a_1MS_t + a_2PNP_{t-1} + a_3OPC_t + a_4GROWTH_t + a_5KS_t u_t \quad (4)$$

where,  $PNP$  is the desired level of profitability,  $MS$  is the market share,  $OPC$  is the operating cost,  $GROWTH$  is the rate of sustainable growth,  $KS$  is the intensity of capital, and  $u$  is the disruptive term.

According to the literature (Vlachvei & Oustapassidis, 1998; Galdeano-Gómez, & Céspedes-Lorente, 2004; Yoo, 2005; Ameniya, 1984), market share is also influenced by several factors including profitability, age, loans, and capital intensity. In addition, the market share equation can take the following form when partial adjustment is taken into account:

$$MS_t = b_0 + b_1PNP_t + b_2MS_{t-1} + b_3AGE_t + b_4KS_t + b_5LEV_t + u_t \quad (5)$$

where,  $MS$  is market share,  $PNP$  is profitability,  $AGE$  is years of operation,  $KS$  is capital intensity,  $LEV$  is the leverage and  $u$  is the disruptive term.

For the estimation of the equations, Notta and Vlachvei (2010) use the following variables.

The profitability of a company is defined as the ratio of its net profits to its sales each year. Market share is calculated as the ratio of the company's annual sales to the total sales of the industry each year, the sustainable growth rate is calculated as the change in capital each year, and debt ratio is calculated as the ratio of the company's total annual loans to its total capital. Also, factors such as age and operating costs were taken from the balance sheets and were included in the equations. Financial ratios were calculated using data from the Hellstat database for all bottled water manufacturing companies that published balance sheets during the years 2016–2020 and consisted of our sample. Due to corporate governance requirements, Greece has made the publication of balance sheets mandatory for companies (Antoniadis & Ananikas, 2005).

In the above equations, both profitability and market share range are both dependent variables. In the case of market share, the values range between 0 and 1, while in the case of profitability they range between -1 and 1. In these cases, the least squares method is considered inadequate and biased (Ameniya, 1984). The Tobit method is proposed as the estimation method. In addition, in two equations, heteroskedasticity and autocorrelation errors are checked by using the Breusch-Pagan and Wooldridge methods respectively (Drukker, 2003).

Therefore, taking into account the interdependence of the two variables, the limited range of their values, and the possible endogeneity between them, the two equations are evaluated simultaneously as a system of equations (Notta et al., 2010). In these cases where we have a system of equations and the Tobit model takes the following form:

$$Y_i^* = x_i\beta + u_i, \quad i = 1, 2, \dots, n \quad (6)$$

$$Y_i = Li, \quad \text{if } y_i^* \leq Li \quad (7)$$

$$Y_i = x_i\beta, \quad \text{if } Li < y_i^* < Ui \quad (8)$$

$$Y_i = Ui, \quad \text{if } y_i^* \geq Ui \quad (9)$$

where,  $Y_i^*$  is the dependent variable,  $x_i$  is the group of independent variables,  $\beta$  is a group to estimate parameters, and  $u_i$  is the errors that result from the hypothesis (Yoo, 2005).

Using the control for autocorrelation (Wooldridge test) we can accept the null hypothesis that there is no autocorrelation for both profitability and market share equations, as it follows that  $F(1,70) = 0,991$  and  $\text{Prob} > F = 0,6702$  for the profit equation while for the market share equation we have that  $F(1,70) = 0,881$  and  $\text{Prob} > F = 0,51$ . Similarly, in the case of the heteroskedasticity test (Breusch-Pagan), it follows that  $\chi^2(1) = 0,169$  and  $\text{Prob} > \chi^2 = 0,5214$  for the profit equation while  $\chi^2(1) = 0,259$  and  $\text{Prob} > \chi^2 = 0,4971$  for the market share equation.

#### 4. RESULTS

According to the Table 1, market share has a positive and statistically significant effect on net profit margin (coefficient = 0.285, probability value = 0.002). In terms of profitability in the previous period, it appears with a coefficient

equal to 0.509 and a probability value below 1%. Bottled water companies in our sample try to increase profits by increasing sales and, by extension, their size.

The sustainable growth rate has also a positive and statistically significant effect (coefficient = 0.021, probability value < 1%). By increasing the sustainable growth rate by 1%, profits will increase by 0.021%, while operating expenses appear negative but statistically significant (coefficient = -0.542, probability value = 0.003). According to capital intensity, the studied bottled water companies did not utilize their available funds to increase profits, since the effect of this variable was not statistically significant (coefficient = 0.008, probability value = 0.342).

Profitability appears to have a positive and statistically significant effect on market share (coefficient = 0.079, probability value = 0.001). In constant, the market share coefficient of the previous period amounts to 0.569 while the probability value appears lower (0.001). Regarding the effect of profitability, it appears that the studied companies invest their profits in strategies to increase their size.

Years of operation (coefficient = 0.043, probability value = 0.453), as well as capital intensity (coefficient = 0.054, probability value = 0.321), do not influence the market share, a fact that is explained by the non-utilization of the available funds in the studied companies. Considering the debt burden index, it appears to have a positive and statistically significant effect (coefficient = 0.327, probability value = 0.032) on the market share, possibly due to the utilization and investment of loan funds by the companies in question to increase their size.

**Table 1.** Results of the simultaneous estimation of the profitability and market share equation

Variables	Profitability (PNP)	Market share (MS)
Profitability (PNP)		0.079 (0.001)***
Profitability (-1) (PNPLAG)	0.509 (0.000)***	
Market share (MS)		0.285 (0.002)***
Growth Rate (GR)	0.021 (0.000)***	
Operating costs (OPC)	-0.542 (0.003)***	
Capital Intensity (KS)	0.008 (0.342)	0.054 (0.321)
Market Share (-1) (MSLAG)		0.569 (0.000)***
Years of Operation (AGE)		0.043 (0.453)
Leverage Ratio (LEV)		0.327 (0.032)

Note: \*\*\* statistically significant at a 1% significance level, \*\* statistically significant at a 5% significance level, \* statistically significant at a 10% significance level. Log-likelihood: 747.78. Wald  $\chi^2$ : 263.35. Prob >  $\chi^2(2)$ : 0.000.

## 5. DISCUSSION

From the results obtained, it is evident that both market share in terms of sales and rate of sustainable growth influence profitability, verifying the theory of industrial organization (Tirole, 1988) that the increase in sales results in higher profits for companies and leads to growth, a result which is

also in line with also other papers such as Notta and Vlachvei (2010), Bargoni et al. (2022), Fischer and Schornberg (2007). A positive and statistically significant effect of the profitability of the previous period on the equation of profitability also indicates the very important role that profitability plays from year to year, establishing a competitive advantage for these firms something which is also in line with Wijnands et al. (2015).

Due to the COVID-19 pandemic, the companies under study did not invest additional funds during the entire study period, as opposed to their movements in the last year, which also explains the positive and statistically significant effect of loans on increasing market share. As it also accepted the investment of loans in the increase of the firm's size may constitute a basic strategy for the increase of their profits (Bargoni et al., 2022).

As we can see from this study the Greek bottled water industry occupies a key role, both from an academic and a research standpoint, as well as at the level of policy-making, both for the Greek manufacturing sector and the entire Greek economy. For that reason, the competitiveness estimation, as well as the justification of the effect of certain economic factors on it, can play an important role in the selection of the proper strategy and as a consequence of their survival.

However, no study referring to Greek bottled water manufacturing firms has been done in previous years to have comparable results in the sector and this may be a limitation of our study, but other studies referring to manufacturing companies in Greece (pharmaceutical, chemical, and plastics) conclude that for all sectors, age, profitability, size, exports, imports, and debt reliance are the most important determinants of market share growth. The efficient use of fixed assets, labor, and operating expenses were significant determinants of profitability. As the sectors and business types differed, small companies were found to be the most profitable (Voulgaris & Lemonakis, 2014).

## 6. CONCLUSION

Summing up the current work it is accepted that through acquisitions and mergers, significant investments have been made in the bottled water sector, which has a critical role to play in the recovery of the Greek economy after the COVID-19 pandemic. Also, it verified the effect of both profitability and market share on firm competitiveness and especially in the Greek bottled water manufacturing companies. In addition, profitability, market share, and loans are considered important factors for the development of strategies that will maintain and stimulate the competitiveness of the companies in question and stimulate their extroversion. Even though we are focusing on a single sector that of bottled water, the structure of the sector and factors such as profitability, market share, and loans can provide safe conclusions for the manufacturing sector in Greece, as well as form the basis for studies in Europe with similar characteristics to Greece. How the smaller and medium size manufacturing firms specifically can be organized in clusters and networks to increase their competitiveness and to develop strategies for their development constitutes the next research for the authors of the current research.

## REFERENCES

1. Ameniya, T. (1984). Tobit models: A survey. *Journal of Econometrics*, 24(1-2), 3-61. [https://doi.org/10.1016/0304-4076\(84\)90074-5](https://doi.org/10.1016/0304-4076(84)90074-5)
2. Antoniadis, I., & Ananikas, L. (2005). Separating the roles of CEO and chairman of the board. The case of the Greek listed firms. In P. Chatzoglou & Ž. Šević, (Eds.), *The 2nd International Conference on Accounting and Finance in Transition* (pp. 225-237). Retrieved from [https://www.researchgate.net/publication/280828869\\_Separating\\_the\\_roles\\_of\\_CEO\\_and\\_Chairman\\_of\\_the\\_Board\\_The\\_case\\_of\\_the\\_Greek\\_listed\\_firms](https://www.researchgate.net/publication/280828869_Separating_the_roles_of_CEO_and_Chairman_of_the_Board_The_case_of_the_Greek_listed_firms)
3. Bargoni, A., Bertoldi, B., Giachino, C., & Santoro, G. (2022). Competitive strategies in the agri-food industry in Italy during the COVID-19 pandemic: An application of K-means cluster analysis. *British Food Journal*. Advance online publication. <https://doi.org/10.1108/BFJ-07-2021-0738>
4. Bhattacharya, M., & Bloch, H. (2000). The dynamic of industrial concentration in Australian manufacturing. *International Journal of Industrial Organization*, 18(8), 1181-1199. [https://doi.org/10.1016/S0167-7187\(99\)00005-3](https://doi.org/10.1016/S0167-7187(99)00005-3)
5. Birgliadi, B., Ferraro, G., Filippeli, S., & Galati, F. (2020). Innovation models in food industry. A review of the literature. *Journal of Technology Management and Innovation*, 15(3), 97-108. <https://doi.org/10.4067/S0718-27242020000300097>
6. Cetindamar, D., & Kilitcioglu, H. (2013). Measuring the competitiveness of firm as an award system. *Competitiveness Review*, 23(1), 7-22. <https://doi.org/10.1108/10595421311296597>
7. Chikán, A. (2008). National and firm competitiveness: A general research model. *Competitiveness Review*, 18(1-2), 20-28. <https://doi.org/10.1108/10595420810874583>
8. Chikán, A., Czakó, E., Kiss-Dobronyi, B., & Losonci, D. (2022). Firm competitiveness: A general model and a manufacturing application. *International Journal of Production Economics*, 243, 108316. <https://doi.org/10.1016/j.ijpe.2021.108316>
9. Crescimanno, M., Galati, A., & Bal, T. (2014). The role of economic crisis on the competitiveness of the agri-food sector in the main Mediterranean countries. *Agricultural Economics — Czech*, 60(2), 49-64. <https://doi.org/10.17221/59/2013-AGRICECON>
10. Drukker, D. M. (2003). Testing for serial correlation in linear panel-data models. *The Stata Journal*, 3(2), 168-177. <https://doi.org/10.1177/1536867X0300300206>
11. Firlej, K., Kowalska, A., & Piowar, A. (2017). Competitiveness and innovation of the Polish food industry. *Agricultural Economics — Czech*, 63(11), 502-509. <https://doi.org/10.17221/111/2016-AGRICECON>
12. Fischer, C., & Schornberg, S. (2007). Assessing the competitiveness situation of EU food and drink manufacturing industries: An index-based approach. *Agribusiness*, 23(4), 473-495. <https://doi.org/10.1002/agr.20139>
13. Foundation for Economic and Industrial Research. (2020). *Annual exhibition for the Greek food and beverage industry*. Athens, Greece: Foundation for Economic and Industrial Research.
14. Galdeano-Gómez, E., & Céspedes-Lorente, J. (2004). The effect of quality-environmental investment on horticultural firms' competitiveness. *Canadian Journal of Agricultural Economics*, 52(3), 371-386. <https://doi.org/10.1111/j.1744-7976.2004.tb00375.x>
15. Geroski, P., & Jacquemin, A. (1988). The persistence of profits: An international comparison. *The Economic Journal*, 98(391), 375-389. <https://doi.org/10.2307/2233373>
16. Harvey, D., Hubbard, C., Gorton, M., & Tocco, B. (2017). How competitive is the EU's agri-food sector? An introduction to a special feature on EU agri-food competitiveness. *Journal of Agricultural Economics*, 68(1), 199-205. <https://doi.org/10.1111/1477-9552.12215>
17. Iaia, L., Vrontis, D., Maizza, A., Fait, M., Scoranno, P., & Cavallo, F. (2019). Family businesses, corporate responsibility and websites. The strategies of Italian wine firms in talking to stakeholders. *British Food Journal*, 121(7), 1442-1466. <https://doi.org/10.1108/BFJ-07-2018-0445>
18. ICAP. (2021). *A sector study for the Greek beverage industry*. Athens, Greece: ICAP.
19. Kuzminski, L., Jalowiec, T., Masloch, P., Wojtaszek, H., & Miciula, I. (2020). Analysis of factors influencing the competitiveness of manufacturing companies. *European Research Studies Journal*, 23(2), 217-227. <https://doi.org/10.35808/ersj/1590>
20. Laureti, T., & Viviani, A. (2011). Competitiveness and productivity: A case study of Italian firms. *Applied Economics*, 43(20), 2615-2625. <https://doi.org/10.1080/00036840903357439>
21. Levy, D. (1986). The speed of the invisible hand. *International Journal of Industrial Organization*, 5(1), 79-92. [https://doi.org/10.1016/0167-7187\(87\)90008-7](https://doi.org/10.1016/0167-7187(87)90008-7)
22. Mattas, K., & Tsakiridou, E. (2010). Shedding fresh light in food industry's role: The recession's aftermath. *Trends in Food Science and Technology*, 21(4), 212-216. <https://doi.org/10.1016/j.tifs.2009.12.005>
23. McDonald, J. T. (1999). The determinants of firm profitability in Australian manufacturing. *The Economic Record*, 75(2), 115-126. <https://doi.org/10.1111/j.1475-4932.1999.tb02440.x>
24. Notta, O., & Vlachvei, A. (2010). Competitiveness and advertising in Greek food and beverage manufacturing firms. *Marketing and Management Sciences*, 140-146. [https://doi.org/10.1142/9781848165106\\_0026](https://doi.org/10.1142/9781848165106_0026)
25. Notta, O., Vlachvei, A., & Samathrakakis, V. (2010). Competitiveness — The case of Greek food manufacturing firms. *International Journal of Art and Science*, 3(7), 211-225. Retrieved from [http://sbagis.farm.teithe.gr/uploads/8/3/4/5/8345585/sbagis\\_a3\\_16.pdf](http://sbagis.farm.teithe.gr/uploads/8/3/4/5/8345585/sbagis_a3_16.pdf)
26. Petropoulos, D. (2019). Analysis of the food and beverage industry in Greece (2009-2017). *Advances in Management and Applied Economics*, 9(5), 25-34. Retrieved from [http://www.sciencpress.com/Upload/AMAE/Vol%209\\_5\\_2.pdf](http://www.sciencpress.com/Upload/AMAE/Vol%209_5_2.pdf)
27. Porter, M. E. (1985). *Competitive advantage. Creating and sustaining superior performance*. New York, NY: Free Press.
28. Ragimun, & Widodo, S. (2019). Strategy of strengthening food and beverage industry in Indonesia. *Journal of Economics and Behavioral Studies*, 11(4(J)), 102-110. [https://doi.org/10.22610/jeb.s.v11i4\(J\).2924](https://doi.org/10.22610/jeb.s.v11i4(J).2924)
29. Scherer, F. M., & Ross, D. (1990). *Industrial market structure and economic performance* (3rd ed.). (pp. 111-112). Boston, MA: Houghton Mifflin Company.
30. Scorrano, P., Fait, M., Maizza, A., & Vrontis, D. (2019). Online branding strategy for wine tourism competitiveness. *International Journal of Wine Business Research*, 31(2), 30-50. <https://doi.org/10.1108/IJWBR-06-2017-0043>

31. Suchánek, P., & Králová, M. (2019). Customer satisfaction, loyalty, knowledge and competitiveness in the food industry. *Economic Research*, 32(1), 1237-1255. <https://doi.org/10.1080/1331677X.2019.1627893>
32. Susilo, D., Wahyudi, S., & Pangestuti, I. R. D. (2020). Profitability determinants of manufacturing firms in Indonesia. *International Journal of Economics and Business Administration*, 8(2), 53-64. <https://doi.org/10.35808/ijeba/443>
33. Tirole, J. (1988). *Theory of industrial organization*. Cambridge, MA: MIT Press.
34. Tong, Y., & Saladríguez, R. (2022). An analysis of factors affecting the profits of new firms in Spain: Evidence from the food industry. *Agricultural Economics — Czech*, 68(1), 28-38. <https://doi.org/10.17221/235/2021-AGRICECON>
35. Tsoukatos, E., Psimarni-Voulgaris, F., Lemonakis, C., & Vassakis, K. (2017). The impact of R&D and information technology on innovation performance of Greek SMEs. *Global Business and Economics Review*, 19(5), 521-535. <https://doi.org/10.1504/GBER.2017.086602>
36. Vlachvei, A., & Oustapassidis, K. (1998). Advertising, concentration and profitability in Greek food manufacturing industries. *Agricultural Economics*, 18(2), 191-198. <https://doi.org/10.1111/j.1574-0862.1998.tb00498.x>
37. Voulgaris, F., & Lemonakis, C. (2014). Competitiveness and profitability: The case of chemicals, pharmaceuticals and plastics. *The Journal of Economic Asymmetries*, 11, 46-57. <https://doi.org/10.1016/j.jeca.2014.04.003>
38. Vrontis, D., & Christofi, M. (2021). R&D internationalization and innovation: A systematic review, integrative framework and future research directions. *Journal of Business Research*, 128, 812-823. <https://doi.org/10.1016/j.jbusres.2019.03.031>
39. Vrontis, D., Christofi, M., & Katsikeas, C. S. (2020). An assessment of the literature on cause-related marketing: Implications for international competitiveness and marketing research. *International Marketing Review*, 37(5), 977-1012. <https://doi.org/10.1108/IMR-07-2019-0202>
40. Vrontis, D., Tardivo, G., Bresciani, S., & Viassone, M. (2018). The competitiveness of the Italian manufacturing industry: An attempt of measurement. *Journal of the Knowledge Economy*, 9(4), 1087-1103. <https://doi.org/10.1007/s13132-016-0397-1>
41. Wijnands, J., van Berkum, S., & Verhoog, D. (2015). *Measuring competitiveness of agro-food industries: The Swiss case* (OECD Food, Agriculture and Fisheries Papers, No. 88). <https://doi.org/10.1787/5jrvvkrhrtmwig-en>
42. Yoo, S.-H. (2005). Analyzing household bottle water and water purifier expenditures: Simultaneous equation bivariate Tobit model. *Applied Economic Letters*, 12(5), 297-301. <https://doi.org/10.1080/1350485042000293121>
43. Zanotti, C., Reyes, F., & Fernandez, B. (2018). Relationship between competitiveness and operational and financial performance of firms: An exploratory study on the European brewing industry. *Intangible Capital*, 14(1), 99-115. <https://doi.org/10.3926/ic.1104>