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GUILHERME LECCO TESSAROLO

THE EFFECT OF POSITIONING STRATEGY ON FIRMS' PERFORMANCE MODERATED BY PRODUCT MARKET COMPETITION

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Dissertação apresentada ao Programa de Pós-graduação em Ciências Contábeis da Universidade Federal do Espírito Santo, como requisito parcial para obtenção do título de Mestre em Ciências Contábeis, na área de concentração Contabilidade e Controladoria.

Orientador: Prof. Dr. Luiz Cláudio Louzada.

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THE EFFECT OF POSITIONING STRATEGY ON FIRMS' PERFORMANCE MODERATED BY PRODUCT MARKET COMPETITION

Abstract

This research aims to investigate the effect of positioning strategies, adopted in a pure or hybrid way, on firms' performance. In addition, it verifies the moderating effect of product market competition in this relationship, in order to analyse under which levels of competition the adoption of a hybrid strategy is superior to the adoption of generic strategies of cost leadership and product differentiation, separately. A sample with 11,322 firm-year observations was analysed. This sample included publicly available archival data from firms in the industries of consumer goods and services cyclical and non-cyclical, and technology, with shares traded on the main stock exchanges of the G20 countries, for the period 2008-2019. To measure the strategic positioning of firms, this research adopts the principal component analysis technique according to the methodology proposed by Tripathy (2006) and Banker et al. (2014). The level of competition in the product market is measured using the Herfindahl-Hirshman index (Besanko et al., 2013). The results indicate that firms adopting a hybrid strategy are more likely to achieve good performances than the others. They also showed that the relationship between strategic positioning and operational performance is moderated by product market level of competitiveness. In a low competition market, the adoption of a strategy is unnecessary. For low to medium levels of competition, pure strategy appears superior. However, in highly competitive environments, the hybrid strategy is more advantageous. This research joins the theoretical fields of accounting, economics, and business administration, to investigate the relationship between exogenous and endogenous factors in the formation of performance and contributes examining the combined effect between the firms' strategy and the market competition in obtaining competitive advantage. In addition, the data sample analysed did not restrict to data referring to a single country or a single industry, as observed in the previous literature.

Keywords: Competitive strategies, Cost leadership, Product differentiation, Hybrid strategy, Product Market Competition.

Introduction

This research, anchored in the Structure-Conduct-Performance (SCP) paradigm, analyses the effect of generic positioning strategies, adopted in pure or hybrid form, on firm performance. In addition, it investigates how product market competition moderates this relationship. Porter's (1980) strategic typologies measurement was performed based on the accounting metrics present in the financial statements, according to Tripathy (2006) and Banker et al. (2014). The industry competition level, in turn, is measured using the Herfindahl-Hirshman index (Besanko et al., 2013).

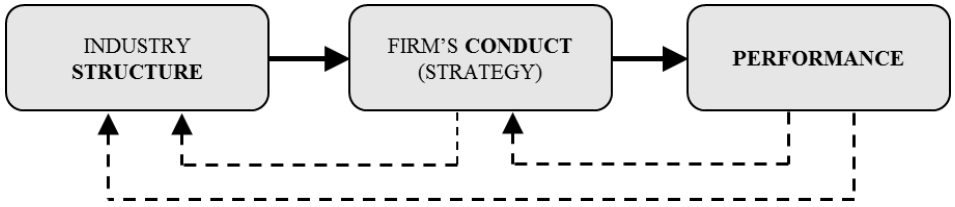
Understanding the factors that lead to firms' heterogeneous performance behaviour, as well as their origins and determinants, have been for decades, one of the main aspects in the business strategy research field (Ghemawat, 2002). The main hypothesis that explains such behaviour is the firms' ability to create and sustain a competitive advantage (Davcik & Sharma 2016). In this context, Porter's (1980) generic positioning theory integrates aspects related to strategic business planning into the Industrial Organization Structure-Conduct-Performance (SCP) model, directing analyses to how to create exclusive strategies in an industry and has been among the main paradigms that seek to elucidate the origin competitive advantage (Salavou, 2015).

The first works that are prepared to study the existing interactions between firm and industry have been born on the foundation of the Theory of Industrial Organization (Tirole, 1988). Based on Mason's studies (1939), on the relationship between market share and price policies practiced by firms, and on Bain's quantitative analyses (1956), on barriers to the entry of new competitors as a primary element of the structure of market, the SCP model (Figure 1) is consolidated as an instrument for analysing the relations between firm and market (Hasenclever & Torres, 2013).

For this Industrial Organization paradigm, the basic characteristics of the market (supply and demand) shape its structure. In response to the particularities of the market, the firm, in turn, assumes a strategic posture, also called conduct that determines performance (Scherer & Ross, 1990). Porter (1980) integrates the SPC model to the strategic business planning through an analytical structure that he calls “competitive strategy”, directing the analysis to how to create exclusive strategies for the industry. The author argues that firms achieve competitive advantage when a solid strategy is adopted to defend the forces that shape the market structure. Therefore, the best way to do this would be to position themselves in total cost leadership, through the efficiency of it processes in producing as the lowest possible cost, or in product differentiation, adding quality and value to their product.

Figure 1

The Structure-Conduct-Performance (SCP) model



Source: Author, adapted from Scherer and Ross (1990).

Firms adopting a position based on total cost leadership seek to offer simplified and standardized products, providing a higher volume of sales when practicing the lowest price in the market (Banker et al., 2014; Campbell et al., 2011; Peng, 2013). Firms opting for a product differentiation strategy offer an exclusive product, which awakens the customer's perception of the presence of benefits and advantages that go beyond its usefulness (Sashi & Stern, 1995). In this way, firms from which the product is differentiated reach high margins, as their target audience is willing to pay a premium price to access products with unique characteristics (Hambrick, 1983).

From the perspective of strategic planning, the competitive strategy approach adds to the SCP model the effects of feedback, represented in Figure 1 by the dotted arrows, so that strategies can change the structure of the market as well as the basic characteristics of supply and demand (Porter, 1983). Such an argument is also verified in the economic theory of the endogenous structure of the market, for which conduct is the main force able of affecting the balance established by the relationship between market structure, business conduct and performance (Etro, 2014). In this regard, strategic choices are placed at the centre of the analysis of the factors that cause heterogeneous performance behaviour.

While holding that the adoption of the generic strategies of positioning provides competitive advantage to firms, Porter (1980) argues that there is a trade-off between cost leadership and product differentiation. Then, it is unlikely that both generic strategies will be established efficiently simultaneously, since when trying to implement a hybrid strategy, firms are unable to apply any of the strategies in a well-defined way, which results in a diffuse culture, poorly oriented and based on conflicting actions that hinder their assimilation by the different hierarchical levels of firms (Jones & Butler, 1988; Miles & Snow, 1978).

Although, in recent decades many surveys have been carried out with the aim of empirically verifying whether there is in fact a trade-off between generic positioning strategies, there does not yet seem to be a suitable answer. While authors such as Kim and Lim (1988), Thornhill and White (2007), and Hansen et al. (2015) found that choosing pure strategies is always more advantageous than combining positioning strategies, other studies such as Kim et al. (2004) and Acquaah and Yasai-Ardekani (2008) present results in which the adoption of hybrid strategies is superior. Sofia and Augustine (2019) argue that the superiority of hybrid strategies is justified by market competition level that demands innovative strategies.

In this sense, Yasa et al. (2019) note that the hybrid strategy plays a mediating role between the influence of the external environment and the capacity of resources on the firms'

performance. While Porter's analyses (1980) considered stable competitive environments, in environments of instability, in which firms are subjected to rapid transformations and high competitiveness, current globalized market characteristics, they are forced to implement a more complex and dynamic approach to strategy (Lapersonne et al., 2015). Competitive advantage, when achieved, has a momentary character (Maury, 2018) and, in markets with a high level of competitiveness, firms are more willing to replicate the strategic behaviour of those that stand out (Garcia-Pont & Nohria, 2002; Lieberman & Asaba, 2006). Hence, as competition increases, firms must review their strategies in order to defend their market share or to pursue a competitive advantage (Andrews, 1996).

This study is based on the SCP paradigm to investigate the aspects that cause the heterogeneous behaviour of performances, under the premise that a positioning based on generic strategies (cost leadership and product differentiation) is one of the possible origins for competitive advantage. Thus, it seeks to answer the following questions: What is the effect of generic positioning strategies, adopted in pure or hybrid form, on firm performance? And how does product market competition moderate this relationship?

To achieve this, it measures the intensity of competition through market concentration, applying the Herfindahl-Hirshman index (Besanko et al., 2013), and uses financial information from the balance sheet and income statement, products of the model accounting, as proxies of assumed positioning (Tripathy, 2006).

The results obtained suggest that firms choosing a hybrid strategy perform better compared to firms that adopt a pure strategy, which agrees with Claver-Cortés et al. (2012), Leitner and Güldenberg (2010), Salavou (2015) and Sofia (2019). In addition, it was found that product market competition has a moderating effect on the relationship between strategic positioning and performance. In markets of low to moderate competition, firms that follow a pure strategy perform better. However, as competition levels increase the adoption of a hybrid

strategy becomes more advantageous, since its complexity in being implemented contributes to the maintenance of competitive advantage (Lapersonne, 2018; Thornhill & White, 2007; Treacy & Wiersema, 1993).

This research contributes to discussions regarding the origin of competitive advantage, by providing answers on how aspects of the product market structure impact the relationship between strategic choices (firms' conduct) and superior performance. In addition, it brings the theoretical fields of accounting, economics, and business administration together, by basing its analysis on the SCP paradigm to investigate how exogenous (competition) and endogenous (strategic positioning) factors are related in the formation of performance, and by using accounting metrics for measuring generic strategies.

The literature that evaluates pure and hybrid strategies is mostly restricted only to the assessment of which strategy provides the greatest performance, not considering how aspects related to the market can influence this relationship. Thus, investigating the moderating effect of competition, this research presents relevant findings not only for this scientific area, but also for the decision makers of the firms, in the strategic choice. Another differential of this study is that it does not restrict its sample to just a certain country or industry, unlike most of the previous research.

The sequence of this work is organized as follows: in the Theoretical Reference and Construction of Hypotheses section, the literature on which this research is based on is revisited, and from there the hypotheses under analysis are presented; the Methodology section presents the characterization of the sample used, the variables and the methodology established for carrying out the empirical analysis; the Results section describes the findings of this research and its analysis; and, finally, the Conclusion section presents the final considerations, limitations and suggestions for future work.

Theoretical framework and hypothesis construction

Positioning and firm performance

Porter (1980) approaches the fields of business strategy and Industrial Organization by applying SCP model to analysis of issues related to the creation of strategies with which firms achieve a competitive advantage. The author develops a theoretical framework called "competitive strategy" where the level of industry competition is shaped by five forces, which are: the threat of new entrants, the bargaining power of suppliers, the bargaining power of buyers, the threat of substitute products or services and the rivalry between existing firms. The configuration and intensity of these forces determine the degree of attractiveness and profitability of an industry. Thus, from the structural analysis of the industry, firms define their strategies to deal with these forces with the purpose of obtaining performances above the average in relation to the industry.

The firm's choice of how to compete in the product market was systematized by Porter (1980). The author presents three generic strategies as ways for firms to manage the effects of the five competitive forces in their favour, describing the generic positioning model. In theory, this model allows firms to choose a position to compete in the market for: total cost leadership, or differentiation of its products, when considering the broad market, or even focus, which is restricted to market shares. According to Hambrick (1983), even firms that work with a focus must choose between cost leadership and product differentiation. Thus, this study restricts its analysis to the first two strategies.

Firms adopting a position based on cost leadership offer the market simple products that meet the needs for which they were developed, without any special attributes associated with them. This strategy allows the standardization of the items offered for sale, as well as their production process, in order to achieve the lowest production cost. The focus of such a positioning is to reach price-sensitive consumers, thus, productive efficiency allows protection

against aggressive competition, providing a lower marketing price in the market (Lapersonne, 2018). Building a cost leadership strategy requires favourable access to raw materials. These advantages are usually achieved with the increase in production, which requires, on the other hand, a high investment in the industrial plant (Banker et al., 2014). The performance of firms that apply this strategy is determined by a high volume of sales, which leads to high turnover of assets (Banker et al., 2014; Campbell et al., 2011; Peng, 2013). In addition, the structuring of strict management control and the minimization of expenses in areas such as R&D, technical assistance, sales force and advertising are also required (Porter, 1980).

The adoption of a differentiation strategy seeks to add a subjective value to the product, through superior characteristics that provide benefits in order to make them special in the customer's view (Sashi & Stern, 1995). These aspects, which extrapolate the usefulness of the product, aim to attract a restricted group of non-price sensitive customers, and who are willing to pay a premium price to access these advantages, enabling the practice of high margins as opposed to a low sales volume. (Balsam et al., 2011; Chaganti et al., 1989). For firms to awaken in customer the perception that a product is superior to others in the market, investment in areas such as quality of inputs, innovation, marketing, and advertising is necessary (Hambrick, 1983). The exclusive character that a differentiation strategy gives to the product makes it more difficult to be imitated by competing firms. Thus, it is expected that, in adopting a product differentiation position, the firm will succeed in sustaining higher margins (Banker et al., 2014; Barney & Hesterly, 2012; Datta, 2010).

A product differentiation strategy is associated with a restricted target audience, which intensifies the exclusivity of its products. On the other hand, a cost leadership strategy is associated with the benefits of large-scale production, which requires comprehensive market participation (Treacy & Wiersema, 1995). For Porter (1980), the failure to develop well-defined positions in one of the two generic strategies puts firms in an unfavourable strategic

situation: "stuck in the middle". In this case, the product delivered to the market has neither a lower cost nor a differentiated quality, which leads to low profitability (Kim & Lim, 1988; Porter, 1980; Thornhill & White, 2007).

Studies argue that it is unlikely that firms will successfully position themselves in both generic strategies simultaneously. The process of building generic strategies involves different productive structures and contradictory activities, making them necessarily opposite (Lapersonne, 2018; Thornhill & White, 2007; Treacy & Wiersema, 1993). It results in a diffuse and poorly oriented culture based on conflicting actions that hinder their assimilation by the different hierarchical levels of firms. By contrast, since the effective positioning is the result of the effort to configure productive resources around a strategic objective, and such idiosyncratic configurations that cause the heterogeneity of performances (Foss, 1998), the positions based on generic strategies do not limited to discrete mutually exclusive positions but extend to a possibility of combinations between cost leadership and product differentiation characteristics (Miller and Dess, 1993).

Considering the lack of convergence in the literature regarding the application of pure and hybrid strategies, research was carried out in order to seek evidence if there is indeed a trade-off between generic strategies or if a position based on a hybrid strategy is associated with superior performance. One of the first outstanding works to analyse the relationship between the strategic types proposed by Porter (1980) and the return on investment, Hambrick (1983), applied cluster analysis to 41 variables present in the PIMS database (Profit Impact of Marketing Strategies) referring to 168 American firms as a method of classifying them according to the strategies adopted. The author found empirical evidence that firms adopting only one of the generic strategies achieved better performance compared to those that adopted a combination strategy. In an investigation of the 54 firms in the electronics industry in South Korea, Kim and Lim (1988) used a questionnaire directed to managers to measure generic

strategies. Through cluster analysis, multiple discriminant analysis, and ANOVA, they also found that a pure strategy produces better results than a combined strategy.

The same is observed by Thornhill and White (2007), who extend the analysis to four specific industries: manufacturing, construction, retail, and services. From the classification of the strategies through the answer to questionnaires directed to the managers of 2,351 large and small Canadian firms, the authors concluded that for all industries the pure strategies presented a superiority in relation to the hybrid strategies in the association with the above average operational returns. As with the cited works, Hansen et al. (2015) measures the positions adopted through questionnaires. However, to compare the financial performance of pure versus hybrid strategies, it uses a set of variables as a proxy for performance (return on sales, return on investment, sales growth rate, net profit, and cash flow). The authors applied analysis of variance (ANOVA) to data from 441 American forestry firms, from 2008 to 2011, and found no evidence that a hybrid strategy was more effective in providing superior performance compared to firms that adopt a pure strategy.

While some studies have shown a predominance of pure strategic positions over hybrid strategies, others have obtained results that oppose these findings. Kim et al. (2004), through cluster analysis with data from 75 South Korean firms, concluded that firms that combine cost leadership and product differentiation strategies have better performance. Spanos et al. (2004) measured the strategy with financial indicators of productivity, investments in marketing and technology, and apply multiple regression to the data of 1,921 Greek manufacturing firms noted that under certain specific conditions in the industry, hybrid strategies may be superior. When analysing the performance of 200 firms in Ghana, whose economy is marked by the transition from a highly regulated environment by the government to a free market system, Acquaah and Yasai-Ardekani (2006) reinforce the argument that hybrid strategies can be positively related to good performance when aspects of the competitive environment are considered. Shinkle et.

al (2013) studied 443 firms from Belarus, Bulgaria, Lithuania, and Ukraine, and found that considering hostile environments, with a high level of unpredictability, the choice for a hybrid strategy would be a safer position to be adopted since it allows a better adaptation to market needs.

Recently, other studies have directed analyses towards the influence of exogenous factors on the relationship between positioning and performance and verified the superiority of the hybrid strategy. Sofia (2019) applied multiple regression analysis to a sample of 42 manufacturing firms in Indonesia and noted that adoption of pure generic strategies has a negative influence on firm performance, but when applied in a hybrid way they have a positive impact. Extending the sample to all firms listed on the Indonesian Stock Exchange during the 2017-2018 period, Sofia and Augustine (2019) found that the implementation of a hybrid strategy will have a significant positive impact on the firms' performance due to competition in the market that requires firms to innovate with their strategy. Kaliappen et al. (2019) investigated how strategic resources affect hybrid competitive strategies and the effect on organizational performance of 475 in Malaysia. The results of the multiple regression analysis indicated that the hybrid competitive strategy has a significant impact on performance and strategic capacity.

In order to examine the role of hybrid strategy in mediating the influence of the external environment and the capacity of resources in the firms' performance, Yasa et al. (2019) used structural equation modelling to study 135 small and medium-sized firms in Bali. Their results indicated that the external environment has a positive and significant influence on the implementation of hybrid strategies and that these have a positive and significant influence on performance. In addition, they found that the hybrid strategy is capable of significantly mediating the influence of the external environment on performance.

While some research has found evidence to indicate a trade-off between positioning based on cost leadership and product differentiation, industry-specific conditions can create an environment where the combination of these strategies that result in hybrid positioning is associated with performance higher. Therefore, the first hypothesis raised by this research is stated:

Hypothesis 1: Firms that adopt hybrid positioning, resulting from the combination of strategic characteristics of cost leadership and product differentiation, tend to present higher performances when compared to firms that adopt only one of the generic strategies in a pure way.

Little is discussed about how exogenous aspects, related to the market, can change the relationship between the strategies adopted and performance. Since the structure of the market determines the conduct of firms, the environment characteristics in which the firms compete may influence the relationship between positioning choices and operational performance. Thus, this study directs its investigation to the effect of the industry's level of competition on the positioning strategies and the firms' performance.

Product market competition and firm performance

The market structure cannot be ignored in analysis involving strategic postures and performance, since they have an influence on strategic planning and management decisions and, consequently, influence the formation of operational performance (McGahan & Porter, 1997; Thompson & Formby, 2003).

One of the aspects that characterize the market is the degree of competitiveness between the firms that operate in it. For Karuna (2008), competition is the measure of the effort applied by firms to win their competitor's market share. In this way, rivalry influences conduct since firms exposed to hostile competition environments are under greater pressure to review their

strategies in order to guarantee the competitiveness of their products (Andrews, 1996). The intensity of competition can be assessed through the market concentration, measured by the Herfindahl-Hirshman index (HHI), which corresponds to the squares sum of the individual participation of each firm in the industry under analysis (Ranieri, 2011). Besanko et al. (2013) categorizes competitiveness based on HHI values using the scale shown in Table 1.

Table 1

Competition intensity measured by the Herfindahl-Hirshman Index

Nature of competition	HHI	Competition intensity
Competition (perfect or monopolistic)	Below 0.2	Fierce or light, depending on product differentiation
Oligopoly	Between 0.2 and 0.6	Fierce or light, depending on the rivalry between firms
Monopoly	0.6 and above	Light

Source: Besanko et al. (2013)

The application of the Herfindahl-Hirshman index to calculate market concentration is observed in studies that analyse the effects of competitiveness on performance. Arguing that the relationship between market structures and performance occurs in a complex way, Kallas (2014) applied regression to fixed and multilevel models with data from 10,903 firms, in 64 countries, over a period of 23 years. The author found the concentration of the industry has a moderating effect on the relationship between the institutional environment and the performance of firms.

In an investigation of the relationship between the competitive advantage and the equity composition of firms, Louzada and Gonçalves (2018) used hierarchical models to analyse Brazilian firms from BOVESPA, considering the period from 1996 to 2014. The authors observed that the relationship between the firm's idiosyncratic resources and operational performance are sensitive to industry’s characteristics. They also found that exogenous factors moderate the relationship between endogenous characteristics and operational performance.

The reviewed literature, therefore, provides evidence that competition is related to performance.

The effect of competition on the relationship between positioning and performance

When obtaining competitive advantage, firms assume a prominent position, distancing themselves from the market average. However, there is a tendency for rival firms to identify and replicate the strategies that contributed to the achievement of this advantage, which causes it to decrease over time until the results revert to the average again. Thus, the competitive advantage does not have a permanent, but momentary character (Maury, 2018). Therefore, a firm only maintains its superior financial performance in the long run if it achieves a competitive advantage that is sustained over time (Banker et al., 2014; Porter, 1985).

Maury (2018) assessed the influence of proxy variables of sustainable competitive advantage on the profitability persistence. The author found that firms that achieve greater market share can maintain their competitive advantage for longer. Firms' effort to position themselves strategically aims at maintaining or expanding their market share. The greater the intensity of competition between firms, the greater the need for them to defend their market share and even win over a new audience. Therefore, the intensity of the competition influences strategic decisions.

As the environment becomes more competitive, new firms imitate the strategic behaviour of others that occupy the same niche (Garcia-Pont & Nohria, 2002; Lieberman & Asaba, 2006). The high competitiveness level requires firms to replan their strategies (Andrews, 1996). Thus, in unstable environments, with rapid changes and high competitiveness, firms must pursue a more complex approach to strategy (Lapersonne et al., 2015). In contrast, in a market with low competitiveness, the strategic emphasis tends to be less (Glynn and Abzug, 2002; Marquis et al., 2007).

Thus, firms inserted in environments where there is no competition, as they are already in a beneficial and comfortable position, have no reason to undertake organizational efforts aimed at positioning based on generic strategies. However, in markets where there is rivalry, it is necessary for the firm to make strategic decisions that guarantee its competitiveness and place them in a favourable position in relation to the others. As new firms enter the market, the implementation of a generic strategy is no longer sufficient to provide a competitive advantage. According to Miller (1992), in this scenario of hyper competitiveness, hybrid strategies may be the most appropriate. Therefore, based on the arguments presented, the following research hypothesis is presented:

Hypothesis 2: Competition in the product market moderates the effect of choosing a positioning strategy, pure or hybrid, on the firms' operational performance.

Accounting information and strategy measurement

The accounting system reflects in numbers the equity situation of firms and their variations over time, providing useful information for assessing the effectiveness of the management of resources employed by firms and for planning their operations (Beaver & Demski, 1974; Palepu & Healy, 2008). For the information generated by accounting to fulfil its objective, the accounting model must be able to transmit a faithful representation, which expresses in a simplified way the reality of the firm (Penman, 2009). In this sense, the IASB (International Accounting Standards Board), in its conceptual structure, establishes “faithful representation” as a fundamental qualitative characteristic of financial information. According to the Board, to be useful, financial information must faithfully represent the economic phenomena it intends to represent (IASB, 2019). Thus, considering accounting as the language that measures the relevant facts that cause the firm's equity variations and culminate in an

expression of the operating result, it is to be expected that all decisions made by the firm are evidenced by the information generated by this system (Rutherford, 2013).

The strategic decisions that agents must take in their day-to-day management can be basically summarized in those that deal with fundraising and allocation and, therefore, are related to changes in assets (application of resources) and liabilities (source of financing) (Palepu & Healy, 2008). The resource bundle concept, definition of firm for the resources-based view (RBV), when analysed from the perspective of the accounting field, finds a parallel with the definition of asset adopted by the IASB (2019). For the Board, an asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to result. Therefore, every firm is necessarily composed of a set of assets (resources), which are in its domain, and which, when combined, can generate economic results.

Therefore, the accounting system, through its techniques, identifies, measures, and evidences the resources controlled by firms. In Finance, the Clean Surplus Relation (CSR) premise, which considers that all transactions that, except for those with shareholders, cause variations in the firm's equity, pass through the income statement and are reflected in the profit, supports the use accounting information in firm valuation models (Feltham & Ohson, 1995). Similarly, this research is based on the premise of Clean Surplus Accounting (CSA), for which every event that causes changes in the firm's equity composition is captured by the accounting system so that the composition of the resources controlled by the firm are described in the balance sheet and the events that provoke the equity variations originating from the application of these resources in the operational activities are mandatorily transited through the Income Statement (DRE) and result in the firms' operational performance (Penman, 1992).

Hence, considering the informational capacity of the accounting system, it can be said that accounting, through its techniques and the structures of its statements, provides the necessary metrics for measuring proxies of the firms' resources. In this way, accounting science

exposes the financial, operational, and economic measures *ex post*, resulting from the strategic choices outlined *ex ante* (Besanko et al., 2013; Palepu & Healy, 2008). Thus, accounting is the link that unites the theoretical fields of economics, administration, and business strategy (Martins, 1972). In order to face the forces imposed by the market structure, firms must draw up a strategic plan that guides management policies and the actions of managers in order to guarantee not only their presence in this market, but also the achievement of satisfactory performances. The adoption of such policies and actions affects the configuration of its productive resources, which reflected in the financial statements generated by the accounting processes.

Methodology

Sample selection and data processing

The sample used was extracted from the Refinitiv Datastream ™ database and is made up of publicly traded firms with shares traded on the main stock exchanges of the G20 constituent countries, a group formed by the 19 largest economies in the world and the European Union. We considered annual data, for the period from 2008 to 2019, of firms in the industries of consumer goods and cyclical services, consumer goods and non-cyclical services, and technology, which are the sectors 53, 54 and 57 of the Thomson Reuters Business Classification (Reuters, 2013). These industries suffer less influence from government regulation (unlike the utility and health industries, for example) and are more exposed to market laws and customer choices. Thus, using them the concepts of the strategic approaches become more evident. This sample was chosen in order to capture aspects related to different markets, in different countries, since previous research was restricted to analyzes considering a single country or a single industry (Salavou, 2015).

For the composition of the final sample, observations that had missing data in the variables forming the positioning proxies were excluded. Based on Tripathy (2006), observations with negative profit and observations with values for sales below 500 thousand dollars were not considered in order to restrict the analysis to large firms. Negative CAPEX values were also suppressed, as their effect does not necessarily represent lower levels of investment. To eliminate the effect of outliers, the technique of winsorization of the variables was used, which consists of replacing the extreme values, above or below the defined minimum and maximum percentiles, with the lowest and the highest distribution values. In the case of the sample used, 2% of the observations of each variable were considered extreme (1% at the bottom and 1% at the top). The final sample analysed totalled 11,322 firm-year observations. Table 2 presents the description of the adjustments made to the collected sample and the distribution of observations and firms in the industries considered for the final sample. For the analysis, the variables were standardized.

Table 2

Adjustments description made to the initial sample collected and the final sample.

	Observation	
Initial sample generated		**172.596**
Selection of economic industries:		115.980
Consumer goods and cyclical services		53.376
Consumer goods and non-cyclical services		21.324
Technology		41.280
Base cleaning:		
Observations with missing data		66.567
Observations with negative profit and / or sales below US $ 500,000.00 and / or negative CAPEX		38.091
Outlier treatment: Winsorization 1%		-
Adjusted final sample		**11.322**
Sample distribution by industry	**Observ.**	**Firms**
Consumer Cyclicals	**5.531**	**1038**
Automobiles & Auto Parts	1822	325
Textiles & Apparel	678	129
Homebuilding & Construction Supplies	535	110
Household Goods	372	81
Leisure Products	194	35
Hotels & Entertainment Services	504	94
Media & Publishing	457	100
Diversified Retail	297	52
Specialty Retailers	672	112
Consumer Non-Cyclicals	**2.797**	**483**
Beverages	344	54
Food & Tobacco	1431	271
Personal & Household Products & Services	376	62
Food & Drug Retailing	646	96
Technology	**2.994**	**648**
Semiconductors & Semiconductor Equipment	639	139
Communications & Networking	339	79
Electronic Equipment & Parts	382	83
Office Equipment	116	21
Computers, Phones & Household Electronics	394	86
Software & IT Services	1124	240

Note: Year-firm observations, referring to annual data, period from 2008 to 2019.
Source: Prepared from data collected from Refinitiv Datastream ™.

Independent variables

Generic positioning strategies

In the literature that addresses the measurement of strategic positioning, six financial indicators are identified as measures of positioning, which are used in this study. Of these, three evidence the firm's effort to create a favorable image and products with high added value (David et al., 2002; Kotha & Nair, 1995; Thomas et al., 1991), which indicates a positioning aimed at differentiating the product (Banker et al., 2014). Are they:

- Relationship between selling, general and administrative expenses (SGA) and sales (or net revenue, SALES), an indicator that captures a firm's willingness to invest in marketing and sales-related activities. Firms that follow the product differentiation strategy tend to have a high value for SGA (Balsam et al., 2011; Banker et al., 2014; David et al., 2002; Hambrick et al., 1982);
- Relationship between investments in research and development (R&D) and net revenue (SALES). Firms that are willing to spend more on research and product design suggest the adoption of a product differentiation strategy, which requires high quality and innovation in products and services (Balsam et al., 2011; Banker et al., 2014; David et al., 2002; Fernando et al., 2016; Hambrick, 1983);
- Relationship between sales (SALES) and cost of goods sold (CGS), which captures the ability to charge prices above the market. It is expected that high values of this indicator (SALES/CGS) are associated with a product differentiation strategy (Balsam et al., 2011; Banker et al., 2014).

The other three indicators show the efficiency of capital investments use in the firm's production process and are related to a strategic positioning based on cost leadership (David et al., 2002; Hambrick, 1983). Are they:

- Relationship between sales (SALES) and capital expenditures (CAPEX) that identifies investment in the development of processes that maximize operational efficiency; high values indicate efficiency in the use of assets (Balsam et al., 2011; Banker et al., 2014; David et al., 2002; Hambrick, 1983);
- Relationship between sales (SALES) and the net book value of the plant and equipment (P&E), which characterizes the total value of facilities and equipment, net of depreciation. High values in this index also demonstrate the efficiency in the use of assets (Balsam et al., 2011; Banker et al., 2014; David et al., 2002; Hambrick, 1983);
- Relationship between the number of employees (EMPL) and fixed assets (P&E), an indicator that captures the efficiency of the workforce, indicating the firm's productivity, a factor associated with the cost leadership strategy (Banker et al., 2014; Berman et al., 1999; Hambrick, 1983).

Thus, this study measures the positioning strategy adopted by each firm based on these six indicators, presented in Table 3 together with its component variables and the respective strategy associated with them. In addition, in order to eliminate the effect of seasonality, the calculation of these indicators considers the average of the values obtained in the last five years. This procedure was performed only at this stage of determining factors, as performed by Banker et al. (2014), Fernando et al. (2016) and Tripathy (2006).

Table 2

Positioning indicators and their respective variables

Indicators	**Strategic positioning**
SGA/SALES	Product differentiation
R&D/SALES	Product differentiation
SALES/CGS	Product differentiation
SALES/CAPEX	Cost leadership
SALES/P&E	Cost leadership
EMPL/P&E	Cost leadership
Variables	**Description**
SGA	General, administrative and sales expenses
SALES	Net revenue (total sales)
R&D	Research and development expenses
CGS	Cost of goods sold
CAPEX	Capital expenditures
P&E	Book value of plant and equipment
EMPL	Total employees

Source: Prepared by the author based on Banker et al. (2014) and Fernando et al. (2016).

To determine the positioning strategies, we adopted an approach based on Tripathy (2006), Banker et al. (2014) and Fernando et al. (2016), in which factors are determined, one for each generic positioning strategy, based on the positioning indicators previously presented. In order to eliminate the effect of seasonality, the calculation of these indicators considers the average of the values obtained in the last five years. This procedure was performed only at this stage of determining factors. After their calculation, the indicators were standardized considering the industry, since the size of the accounting information may vary according to the industry to which the firms belong. Then, the Principal Component Analysis (PCA) technique is applied to assess whether the product differentiation and cost leadership indicators are, in fact, grouped into two distinct components and their respective loads.

First, the adequacy of the data was verified using the KMO statistic equal to 0.618, considered reasonable (Hair et al., 2006), and the Bartlett's sphericity test (chi-square: 3702.863, with 15 degrees of freedom, $p < 0.001$). When applying the Principal Component

Analysis (PCA), the extraction of the components followed the Kaiser criterion, for which only the factors with eigenvalue greater than 1 should be considered, and the accumulated explained variance, which exceeded the minimum level of 60% (Hair et al., 2006) with the determination of the second component. The Varimax orthogonal rotation procedure was used, which seeks to minimize the number of variables that present high loads in each factor and, according to Pallant (2007), it is the most used method. The verification of the reliability and internal consistency of the groups of formed variables was performed with the calculation of Cronbach's alpha, for which values above 0.60 and preferably above 0.70 are considered acceptable (Nunnally, 2013). Factor loads below 0.30 were suppressed, as recommended for cases of elevated samples (Tabachnick and Fidell, 2007). The results obtained through the PCA are shown in Table 4.

Table 4

Results of principal components analysis (PCA) - Sample period: 2008-2019

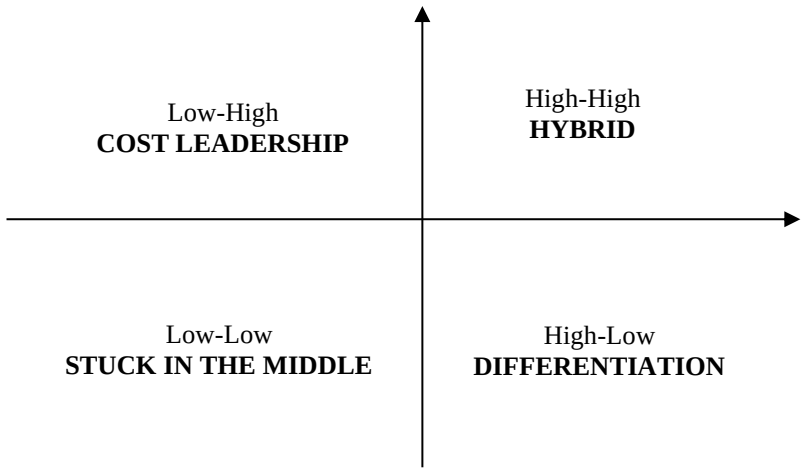
Variables	Cost leadership factor loading	Product Differentiation factor loading	Communalities
SGA/SALES		0.856	0.735
R&D/SALES		0.595	0.366
SALES/CGS		0.827	0.685
SALES/CAPEX	0.759		0.577
SALES/P&E	0.850		0.735
EMPL/P&E	0.759		0.584
Accumulated explained variance	31.5%	61.4%	
Cronbach’s alpha	0.705	0.647	

Using the loads of the components found, product differentiation and cost leadership factors were determined for each observation in the sample. These factors indicate the efficiency of each firm when adopting each of the generic positioning strategies. Based on the

studies by Yamin et al. (1999) and Lapersonne (2018), Figure 2 is used to identify the positioning strategy from the scores calculated for the product differentiation (horizontal axis) and cost leadership (vertical axis) factors. The high score in the product differentiation factor and low in the cost leadership factor (High-Low) characterizes a position in product differentiation. Conversely, a low value in the product differentiation factor and a high value in the cost leadership factor (Low-High), represents a position in cost leadership. Firms that can apply both generic strategies simultaneously efficiently (High-High) are considered with a hybrid positioning strategy. Finally, the group called "stuck in the middle", when product differentiation and cost leadership strategies are not applied efficiently (Low-Low).

Figure 2

Classification of positioning strategy



Note: Adapted from Yamin, Gunasekaran and Mavondo (1999).

In order to carry out the analyzes proposed by this study and compare the effects of the strategies adopted in a hybrid and pure way, the observations were grouped and classified as: pure strategy (referring to the adoption of the product differentiation strategy or the cost leadership strategy, exclusively), hybrid strategy (adoption of both generic strategies simultaneously) and "stuck in the middle" (relative to firms that do not adopt any of the generic strategies).

Competition level by industry

The Herfindahl-Hirshman index (HHI) is a measure of the size of firms in relation to their industry, so it can be used as an indicator of the degree of competition between them (Besanko et al., 2013). It is calculated by squaring the market share of each firm competing in an industry and then summing the resulting numbers. Since n is the total number of firms in the industry, this index assumes values from 1/n to 1 and the higher the value, the greater the concentration and the lesser the competition (Resende & Boff, 2013). Therefore, in this study, the level of competition (Competition) is the inverse of HHI, determined by Equation 1. Thus, the higher the value of the Competition variable, the greater the level of competitiveness of the industry in which the firm is inserted. After its calculation, the variable was normalized to the range 0 to 1.

$$\text{Competition} = \frac{1}{\sum_{i=1}^{n}(\text{market share}_i)^2} \quad (1)$$

Where: market share represents the market share of firm i; and n represents the total number of firms in the industry under analysis.

Dependent variable

The dependent variable used is the firms' operational performance. Like Amir et al. (2011), Bauman (2014), Fairfield & Yohn (2001) and Yu et al. (2020), this research uses the RNOA (return on net operating assets) as a performance metric. This indicator was obtained by dividing the operating net income and the total assets (Equation 2).

$$\text{RNOA} = \frac{\text{Net operating income}}{\text{Total assets}} \quad (2)$$

To use the RNOA as a categorical variable (Performance), it was classified as “Good performance” and “Poor performance”. First, the RNOA was standardized considering each industry. To classify firms as successful or unsuccessful, Delen et al. (2013) divided their

sample using the median value. We used a similar approach, however median performance values (RNOA) corresponding to 10% of the distribution above and below the median are not considered for the analyzes. This was done considering that this intermediate group would refer to a medium performance, neither characterized as good nor as poor. Thus, the groups of observations with performance above and below the intermediate group were classified as "Good performance" and "Poor performance", respectively.

Control variables

Based on previous studies (Banker et al., 2014; Fernando et al., 2016; Tripathy, 2006), the following variables were chosen: Leverage (measured by the value of total long-term debt divided by total shareholders' equity); Book to market (the book value-market value ratio at the beginning of the year); and Size (the ratio between the firm's sales and the industry's total sales), as the size of the firm positively affects its performance, since larger firms have more investment opportunities than smaller ones (Gill, Biger & Mathur, 2010).

Competitors and the nature of competition vary in different markets and industries, so the relationship between the adopted positioning strategy and performance can be influenced by a competitive environment (Thornhill & White, 2007). Hence, the control variable Industry (referring to the industry in which the firm operates) was also inserted in order to control its specific effects. The Country variable was also considered in the analysis, as countries have legal and regulatory environments that can affect the firm's profitability (Healy et al., 2014).

Studies suggest that the life cycle stage of the firm has an effect on the firm's performance and on its strategy (Dickinson, 2011; Haiyan et al., 2020; Zhou et al., 2016). Haiyan et al. (2020) also points out that firms in the growth and mature phases are more engaged in adopting a strategy of continuous innovation. In addition, the life cycle stage carries more relevant information when compared to the longevity (Dickinson, 2011; Gort & Klepper,

1982). Therefore, the Life Cycle control variable was determined from the signs (positive or negative) of cash flows from operations (CFOP), investments (CFINV) and financing (CFFIN), based on the analyzes and classification determined by Dickinson (2011) and Gort and Klepper (1982). The stages were classified as: Introduction (CFOP < 0, CFNV < 0, and CFFIN > 0); Growth (CFOP > 0, CFINV < 0 and CFFIN > 0); Mature (CFOP > 0, CFINV < 0 and CFFIN < 0); Decline (CFOP < 0, CFINV > 0, and CFFIN ≤ or > 0); and Shake-out (other combinations).

The Life Cycle, Industry and Country variables, being categorical, are inserted in the models as dummy. Thus, each category of these variables is inserted with a value of 1 or 0, indicating whether the observation has this characteristic or not, respectively.

Empirical models

Empirical models of logistic regression were used to evaluate the research hypotheses. For model calibration, continuous variables were standardized by industry and categorical variables were inserted as dummies. In order to assess the influence of the strategic positioning adopted in a hybrid or pure way (in product differentiation or in cost leadership) on operational performance, model 1 of logistic regression presented in Equation 3 was established.

$$\begin{aligned} \text{Performance}_{it} = {} & \alpha_0 + \beta_{1,2,3}\,\text{Positioning}_{it} + \beta_4\,\text{Book to market}_{it} \\ & + \beta_5\,\text{Leverage}_{it} + \beta_6\,\text{Size}_{it} + \gamma\,\text{Industry}_{it} \\ & + \gamma\,\text{Country}_{it} + \varepsilon_{it} \end{aligned} \quad (3)$$

where the categorical variable Positioning corresponds to the strategic positioning adopted and its categories (“stuck in the middle”, pure and hybrid) are inserted as dummies. The variables Book to market, Leverage and Size correspond to continuous control variables. The categorical control variables Industry and Country are inserted into the model as dummies, where each category is associated with its respective γ coefficient.

To investigate the direct effect of industry competition on operational performance, the Competition variable was inserted into model 1, forming model 2 (Equation 4).

$$\text{Performance}_{it} = \alpha_0 + \beta_{1,2,3}\,\text{Positioning}_{it} + \beta_4\,\text{Competition}_{it} + \beta_5\,\text{Book to market}_{it} + \beta_6\,\text{Leverage}_{it} + \beta_7\,\text{Size}_{it} + \gamma\,\text{Industry}_{it} + \gamma\,\text{Country}_{it} + \varepsilon_{it} \quad (4)$$

where the variable Competition is continuous and presents values in the range 0 to 1, with 0 corresponding to a industry without competition and 1 corresponding to a industry with maximum competition (considering the evaluated sample).

According to Banker et al. (2014), the age of the firm should be considered as a control variable. However, in addition to the firm's life cycle being more representative than its longevity (Dickinson, 2011; Gort & Klepper, 1982), studies suggest that the life cycle has an influence on the performance achieved and has an impact on the implementation of the strategy (Haiyan et al., 2020). Hence, the life cycle was added as a control variable for the composition of model 3 (Equation 5).

$$\text{Performance}_{it} = \alpha_0 + \beta_{1,2,3}\,\text{Positioning}_{it} + \beta_4\,\text{Competition}_{it} + \beta_5\,\text{Book to market}_{it} + \beta_6\,\text{Leverage}_{it} + \beta_7\,\text{Size}_{it} + \gamma\,\text{Industry}_{it} + \gamma\,\text{Country}_{it} + \gamma\,\text{Life Cycle}_{it} + \varepsilon_{it} \quad (5)$$

In order to evaluate the combined effect between positioning, adopted in pure or hybrid form, and the industry competition in obtaining a superior performance, model 4 (Equation 6) was used.

$$\text{Performance}_{it} = \alpha_0 + \beta_{1,2,3}\,\text{Positioning}_{it} + \beta_4\,\text{Competition}_{it} + \beta_{5,6,7}\,\text{Positioning}_{it} * \text{Competition}_{it} + \beta_8\,\text{Book to market}_{it} + \beta_9\,\text{Leverage}_{it} + \beta_{10}\,\text{Size}_{it} + \gamma\,\text{Industry}_{it} + \gamma\,\text{Country}_{it} + \varepsilon_{it} \quad (6)$$

Then, the life cycle was also added as a control variable to verify whether its insertion contributes to the previous model, constituting model 5 (Equation 7).

$$\begin{aligned} \text{Performance}_{it} = {} & \alpha_0 + \beta_{1,2,3}\,\text{Positioning}_{it} + \beta_4\,\text{Competition}_{it} \\ & + \beta_{5,6,7}\,\text{Positioning}_{it} * \text{Competition}_{it} \\ & + \beta_8\,\text{Book to market}_{it} + \beta_9\,\text{Leverage}_{it} \\ & + \beta_{10}\,\text{Size}_{it} + \gamma\,\text{Industry}_{it} + \gamma\,\text{Country}_{it} \\ & + \gamma\,\text{Life Cycle}_{it} + \varepsilon_{it} \end{aligned} \quad (7)$$

Results and discussions

Descriptive statistics

Table 5 presents the descriptive statistics of the RNOA and the continuous independent variables inserted in the models. The statistics referring to the complete sample are presented, considering the groups with pure and hybrid strategy separately, and corresponding to the Good and Poor performance classifications. The numbers of observations (n) are presented with the respective percentage in relation to the total sample. Considering the complete sample, in 50.7% of the observations the generic strategies are adopted in a pure way, while in only 10% the hybrid strategy is applied. This disparity possibly occurs because the hybrid strategy is more difficult to achieve (Treacy & Wiersema, 1993).

The variable RNOA presented mean and median values of 0.092 and 0.075, respectively (complete sample). When evaluating separately the groups that adopt pure and hybrid strategy, the averages found were 0.095 and 0.118, respectively, both values above the general average that also includes firms in the “stuck in the middle” category. Thus, it was observed that firms that do not adopt any of the generic positioning strategies tend to perform below the others. When comparing pure and hybrid strategies, statistics suggest superior

performance, on average, by hybrid strategy firms, in accordance with the literature (Claver-Cortés et al., 2012; Leitner & Güldenberg, 2010; Sofia, 2019).

Table 5

Descriptive statistics

		All strategic groups *					Pure Strategy		Hybrid Strategy	
		n = 11,322 (100%)					n = 5,741 (50.7%)		n = 1,127 (10.0%)	
	Variables	Mean	Median	Q1	Q3	Standard deviation	Mean	Median	Mean	Median
All performance levels**	RNOA	0.092	0.075	0.045	0.119	0.068	0.095	0.079	0.118	0.099
	Competition	0.243	0.189	0.095	0.304	0.209	0.242	0.191	0.222	0.176
	Book to market	2.775	1.900	1.060	3.420	3.322	2.860	1.960	3.914	2.810
	Leverage	0.395	0.187	0.012	0.516	0.806	0.367	0.173	0.327	0.109
	Size	0.093	0.020	0.007	0.072	0.190	0.093	0.020	0.130	0.020
		n = 4,529 (40.0%)					n = 2,471 (21.8%)		n = 584 (5.2%)	
Good performance	RNOA	0.152	0.133	0.104	0.178	0.067	0.152	0.133	0.173	0.153
	Competition	0.215	0.176	0.078	0.273	0.190	0.214	0.176	0.230	0.176
	Book to market	3.756	2.800	1.540	4.830	4.221	3.720	2.820	4.990	4.005
	Leverage	0.337	0.111	0.001	0.433	0.914	0.319	0.108	0.311	0.058
	Size	0.103	0.021	0.007	0.076	0.208	0.100	0.020	0.118	0.019
		n = 4,529 (40.0%)					n = 2,143 (18.9%)		n = 329 (2.9%)	
Poor performance	RNOA	0.039	0.039	0.025	0.051	0.018	0.039	0.040	0.043	0.043
	Competition	0.267	0.209	0.109	0.328	0.219	0.264	0.215	0.224	0.199
	Book to market	1.963	1.330	0.830	2.320	2.338	2.065	1.330	2.745	1.710
	Leverage	0.444	0.252	0.036	0.578	0.715	0.432	0.251	0.301	0.170
	Size	0.082	0.020	0.007	0.069	0.169	0.085	0.019	0.125	0.025

Notes: * Including hybrid, pure, and "stuck in the middle" strategy groups. ** Including levels of good, poor, and medium performance.

Regarding the size of the firms, on average firms with a hybrid strategy tend to be larger and that larger firms tend to obtain superior performance. In addition, the median of the size variable is approximately the same for the analyzed groups, which suggests a similar distribution of the size of the firms, between the groups. In relation to the industry competition, the mean and median values of the groups were close, which indicates a balance of the sample regarding this variable.

The correlation matrix (Table 6 - Panel A) shows that, considering the general sample, the Competition is negatively correlated with performance (RNOA). When considering the different strategic groups (Table 6 - Panel B), this negative correlation remains for firms that choose a pure strategy. However, for firms that adopt the hybrid strategy, even though the result has not shown statistical significance, there is an indication that there was a sign inversion in the relationship between competition and performance (RNOA). Comparing firms that follow only one of the positioning strategies in a pure way (Table 6 - Panel C), both strategies are negatively correlated with performance (RNOA), in line with what was indicated by Panel B. Thus, these results suggest that the increase of competition undermines the performance of firms that adopt pure strategies. In more competitive environments, firms that adopt a hybrid strategy tend to perform better. Such relationships corroborate the results presented by Sofia and Augustine (2019) and Yasa et al. (2019).

Table 6

Correlation matrix

Panel A: Complete sample

		1	2	3	4	5
1	RNOA	1				
2	Competition	-0.107***	1			
3	Book to market	0.311***	-0.024**	1		
4	Leverage	-0.097***	-0.060***	0.310***	1	
5	Size	0.064***	-0.342***	0.064***	0.061***	1

Panel B: Sample by strategy group - Pure and Hybrid Strategies

		Pure Strategy \ Hybrid Strategy				
	Variáveis	1	2	3	4	5
1	RNOA		0.038	0.342***	-0.023	-0.007
2	Competition	-0.118***		0.031	-0.074**	-0.362***
3	Book to market	0.292***	-0.034**		0.382***	-0.073**
4	Leverage	-0.101***	-0.059***	0.322***		0.019
5	Size	0.050***	-0.351***	0.041***	0.054***	

Panel C: Sample by strategy group - Product differentiation and cost leadership strategies

		Differentiation \ Cost leadership				
	Variáveis	1	2	3	4	5
1	RNOA		-0.082***	0.340***	-0.048*	-0.011
2	Competition	-0.143***		-0.034	-0.035	-0.356***
3	Book to market	0.266***	-0.035*		0.226***	0.053**
4	Leverage	-0.128***	-0.069***	0.371***		0.079***
5	Size	0.092***	-0.353***	0.033*	0.047**	

Notes: Panel B - Correlations referring to pure and hybrid strategies in the lower and upper triangle, respectively. Panel C - Correlations referring to product differentiation and cost leadership strategies in the lower and upper triangle, respectively. *, **, ***: significant correlations at 10%, 5% and 1%, respectively.

Regression results

The results of the logistic regression for the five models under analysis are shown in Table 7. Models 1, 2 and 3, investigate the first research hypothesis and evaluate the direct association between the strategic positioning, adopted in a pure way (in product differentiation or in leadership) or in a hybrid way (both generic strategies simultaneously), and good performance. Through the VIF analysis, values higher than 10 were not found, which indicates that there is no multicollinearity problem (Hair et al., 2006).

The results of model 1 show that the adoption of positioning strategies, whether pure or hybrid, has a positive and significant impact on superior performance (Pure Strategy: coefficient 0.279, sig. p <0.01; Hybrid Strategy: coefficient 0.430, sig. p <0.01). Besides that, the Hybrid Strategy provides a greater chance of obtaining a good performance. In model 2, the addition of the Competition revealed that this variable is significantly negatively associated with performance (coefficient 0.410, sig. p <0.05). However, the insertion of the Competition as a variable of direct relation to the performance generated only a small improvement in the quality of the model (variation of R^2 Nagelkerke: 0.06%) and, in relation to the strategic positioning, it did not change the interpretations provided by the model 1.

From the third model, in which the Life Cycle variable is added, we can observe that the Mature and Shake-out phases had a positive and significant impact on performance (Mature: coefficient 1.725, sig. p <0.01; Shake out: coefficient 1.946, sig. p <0.01), similarly to Haiyan et al. (2020). Thus, firms that are in these stages of the life cycle are more likely to achieve superior performance. The insertion of the Life Cycle generated a 2.56% increase (R^2 Nagelkerke) in the quality of the model and the hybrid strategy continued to have a positive impact on performance remained with its superiority, in relation to pure strategy. These results corroborate the first research hypothesis (H1), as they indicate that it is possible to adopt a hybrid strategy and obtain good performance. In addition, when firms are able to awaken in

their target audience a perception that their product differs from competitors, keeping their production focused on maximum efficiency aiming at cost leadership, the chances of obtaining superior performance are greater (Salavou, 2015; Sofia, 2019).

Table 7
Results of logistic regression models

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-0.329	-0.381	-1.663	0.021	-1.223
	(-0.291)	(-0.337)	(-1.355)	(0.018)	(-0.978)
Stuck in the middle[a]					
Pure Strategy	0.279***	0.279***	0.276***	0.156*	0.122
	(5.254)	(5.259)	(5.117)	(1.870)	(1.446)
Hybrid Strategy	0.430***	0.431***	0.404***	-0.001	-0.066
	(4.677)	(4.680)	(4.351)	(-0.007)	(-0.481)
Competition		-0.410**	-0.325*	-0.870***	-0.860***
		(-2.138)	(-1.667)	(-3.444)	(-3.369)
Competition * Pure Strategy				0.493*	0.617**
				(1.858)	(2.300)
Competition * Hybrid Strategy				1.758***	1.922***
				(4.245)	(4.560)
Book to market	0.994***	0.995***	0.981***	0.993***	0.979***
	(26.176)	(26.192)	(25.816)	(26.124)	(25.728)
Leverage	-0.744***	-0.743***	-0.737***	-0.743***	-0.737***
	(-22.255)	(-22.229)	(-21.985)	(-22.213)	(-21.964)
Size	0.032	0.027	0.005	0.024	0.001
	(0.809)	(0.698)	(0.147)	(0.611)	(0.046)
Life Cycle (*dummy*) Decline[b]					
Growth			0.651		0.647
			(1.509)		(1.504)
Introduction			-0.530		-0.584
			(-0.821)		(-0.901)
Mature			1.725***		1.741***
			(8.825)		(8.877)
Shake-out			1.946***		1.962***
			(12.032)		(12.078)
Industry dummy	Yes	Yes	Yes	Yes	Yes
Country dummy	Yes	Yes	Yes	Yes	Yes
R^2 Cox & Snell (%)	23.69	23.73	25.65	23.88	25.83
R^2 Nagelkerke (%)	31.58	31.64	34.20	31.84	34.44
AIC	10,224.30	10,221.71	9,998.55	10,207.10	9,980.68
BIC	10,636.76	10,641.29	10,446.57	10,640.89	10,442.92
VIF (mean)	2.18	2.82	2.67	3.47	3.29

Notes: The coefficients and their significance are displayed, and below (in parentheses) the z-value. *, ** and *** significant at 10%, 5% and 1%, respectively. [a], [b]: reference variables for Positioning and Life Cycle, respectively.

In models 4 and 5, corresponding to the analysis of the second research hypothesis, the results regarding to the moderating effect of the industry competition in the relationship between strategic positioning and operational performance are presented. The results of model 4 show that the interaction between Competition and Positioning has a positive and significant effect on performance, which occurs more significantly in the case of the Hybrid Strategy (Pure Strategy: coefficient 0.493, sig. p <0,10; Hybrid Strategy: coefficient 1.758, sig. p <0.01). The insertion of the control variable Life Cycle (model 5) slightly improved the quality of the model (variation of R^2 Nagelkerke: 2.6%) and further increased the positive effect of both strategies, remaining higher for the iteration with the Hybrid Strategy (Pure Strategy: coefficient 0.617, sig. p <0.05; Hybrid Strategy: coefficient 1.922, sig. p <0.01). The direct effect of the Life Cycle on performance was similar to models 1, 2 and 3. Hence, the results obtained validate the second hypothesis of this research (H2). The results also reveal that in a competitive environment, firms that adopt the hybrid strategy are more likely to perform well.

Regarding the control variables, the variables Book to market, Leverage and Industry (most of the categories) were significant for all models. The variable Country was not significant, which indicates that, considering the operating environment of firms, the industry seems to have more relevance than the country. The complete table with the results for all categories of the Industry and Country variables is presented in Appendix I.

Figure 4 shows the graphs of the interaction between the competition and each group of strategic positioning. Figure 5 presents a similar graphic analysis, but the Competition variable is divided into three categories: low (HHI ≥ 0.6), medium (0.2 ≤ HHI <0.6) and high (HHI <0.2). Such classification is based on Besanko et al. (2013), who associated these categories with situations of monopoly, oligopoly, and competition, respectively. The graphics show the effect of competition on the relationship between the strategic positioning adopted and the performance obtained. In environments of low competitiveness, firms that adopt

generic positioning strategies in a pure way present better performance. When evaluating this category more accurately (Figure 5 - Low Competition), we notice that when competition tends to the minimum value, which is associated with a monopoly situation (Besanko et al., 2013), there is no expressive difference between the performance obtained when adopting pure or hybrid strategy. So, in the face of a monopoly situation, operational performance is not affected by strategic choices. In this case, the effort to apply a strategic positioning is not necessary.

As competition intensifies, the performance of firms with a hybrid strategy also grows and, simultaneously, the adoption of a pure strategy is negatively affected. Consequently, in a highly competitive environment, the hybrid strategy is associated with superior performance in comparison with pure strategy. Thus, the graphics suggest that the adoption of a generic positioning strategy exclusively (or in product differentiation, or in cost leadership) can be advantageous in low to medium competition environments. However, in highly competitive environments, the adoption of a single strategy may not be enough to achieve competitive advantage (Lapersonne et al., 2015). Due to the large number of competitors in the market, there is a greater tendency for firms to follow the strategies adopted by those that are highlighted, which results in the neutralization of the competitive advantage previously achieved (Lieberman & Asaba, 2006; Maury, 2018). Therefore, in this situation, the firm must establish a more complex strategy from the point of view of its implementation to guarantee the persistence of competitive advantage. Hence, due to its complexity for uniting strategies that involve different productive structures and contradictory activities (Lapersonne, 2018; Thornhill & White, 2007; Treacy & Wiersema, 1993), the hybrid strategy provides superior performance in highly competitive environments.

Figure 4

Interaction graph

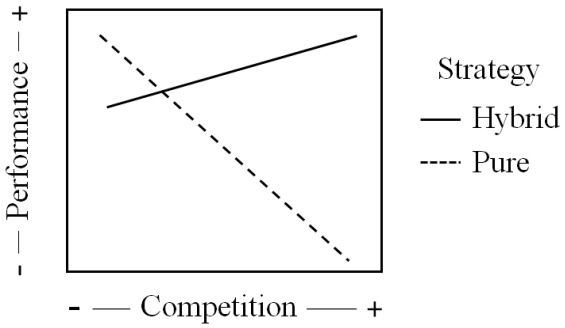
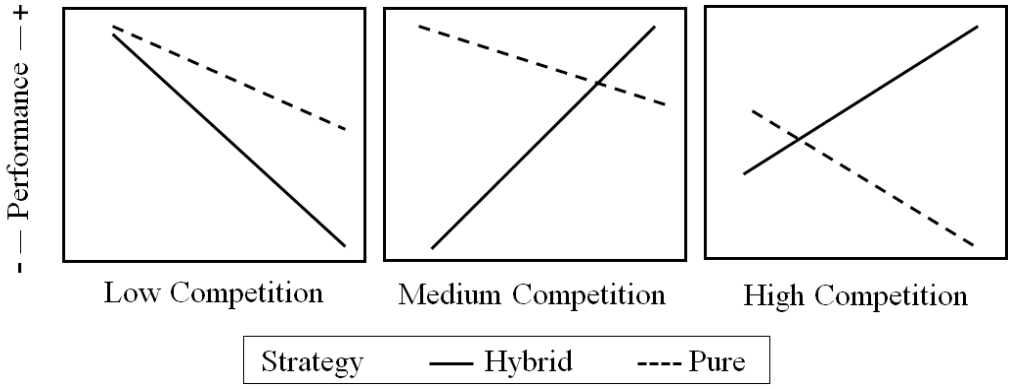


Figure 5

Interaction graph considering low, medium and high competition levels



Conclusions

This study evaluated the effect of generic positioning strategies, adopted in pure or hybrid form, on firm performance, and the effect of product market competition on this relationship. It investigated the hypotheses that the adoption of a hybrid strategy provides greater performance when compared to the pure strategy, and that the level of competition has an impact on the strategic choices in obtaining competitive advantage. We analyzed a sample with 11,322 firm-year observations referring to publicly available archival data from firms in the industries of consumer goods and cyclical services, consumer goods and non-cyclical services, and technology, with shares traded on the main stock exchanges of the G20 countries, for the period 2008-2019. Based on the methodology for measuring the positioning of Banker

et al. (2014), Fernando et al. (2016) and Tripathy (2006), the classification of the strategy adopted in the pure, hybrid and “stuck in the middle” categories were carried out. Then, the research hypotheses were tested using logistic regression models, considering performance as a dependent variable. The performance was categorized as “Good” or “Poor” based on the RNOA values.

Regarding the first hypothesis, the results indicate that the adoption of a hybrid positioning strategy (in product differentiation and in cost leadership, simultaneously) is associated with obtaining superior performance. In addition, firms that manage to implement the hybrid strategy are more likely to achieve good performances than the others. The results obtained for the evaluation of the second hypothesis suggest that the relationship between strategic positioning and firms' operational performance is moderated by the level of product market competitiveness. Specifically, the results showed that in a market of low competition, tending to monopoly, the adoption of a strategy, whether pure or hybrid, is not necessary, since the operational performance is not affected by strategic choices. At low to medium levels of competition, the results indicate that the pure strategy is superior. However, in highly competitive environments, the hybrid strategy is more advantageous due to its implementation complexity that guarantees the maintenance of the competitive advantage achieved.

This research contributes to a better understanding of the combined effect between the positioning strategy adopted by the firms and the market competition level to obtain competitive advantage. Confirming that the hybrid strategy is achievable and provides superior performance, the results indicate the effort for its implementation, which involves different and even contradictory productive structures, pays off in highly competitive environments. Thus, the importance of assessing the level of market competition in strategic choice is identified. This study approaches the theoretical fields of accounting, economics and business administration, since it is based on the SCP paradigm to investigate how exogenous

(competition) and endogenous (strategic positioning) factors are related to performance formation and uses accounting metrics to the measurement of generic strategies. In addition to deepening scientific knowledge in the area, our analysis can assist decision makers in strategic decisions and in the allocation of their resources. Another important aspect is that this study did not restrict its sample to data referring to a single country or a single industry, which is observed in the previous literature (Salavou, 2015).

However, limitations were found. First, the initial database was considerably reduced due to the large number of missing data. Another aspect that must be recognized is the endogeneity of the data analyzed when measuring positioning and determining performance. Nevertheless, such a limitation does not invalidate the results obtained and the research effort since this is an issue intrinsic to this field of study. Further avenues of this research could include other dimensions of the market structure such as complexity, munificence and dynamism, which are related to the unpredictability of the environment. There is also a scope to expand the discussion regarding the influence of the phases of the firms' life cycle, which, despite being observed in this study, was not this research focus.

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Appendix I

Complete results of the logistic regression models

(to be continued)

Independent variables		Model 1	Model 2	Model 3	Model 4	Model 5
Constant		-0,329 (-0,291)	-0,381 (-0,337)	-1,663 (-1,355)	0,021 (0,018)	-1,223 (-0,978)
Stuck in the middle[a]						
Pure Strategy		0,279*** (5,254)	0,279*** (5,259)	0,276*** (5,117)	0,156* (1,870)	0,122 (1,446)
Hybrid Strategy		0,430*** (4,677)	0,431*** (4,680)	0,404*** (4,351)	-0,001 (-0,007)	-0,066 (-0,481)
Competition			-0,410** (-2,138)	-0,325* (-1,667)	-0,870*** (-3,444)	-0,860*** (-3,369)
Competition * Pure Strategy					0,493* (1,858)	0,617** (2,300)
Competition * Hybrid Strategy					1,758*** (4,245)	1,922*** (4,560)
Book to market		0,994*** (26,176)	0,995*** (26,192)	0,981*** (25,816)	0,993*** (26,124)	0,979*** (25,728)
Leverage		-0,744*** (-22,255)	-0,743*** (-22,229)	-0,737*** (-21,985)	-0,743*** (-22,213)	-0,737*** (-21,964)
Size		0,032 (0,809)	0,027 (0,698)	0,005 (0,147)	0,024 (0,611)	0,001 (0,046)
Life Cycle (*dummy*)	Decline[b]					
	Growth			0,651 (1,509)		0,647 (1,504)
	Introduction			-0,530 (-0,821)		-0,584 (-0,901)
	Mature			1,725*** (8,825)		1,741*** (8,877)
	Shake-out			1,946*** (12,032)		1,962*** (12,078)

(to be continued)

	Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5
Industry (dummy)	Automobiles & Auto Parts [c]					
	Textiles & Apparel	-0,198* (-1,686)	-0,069 (-0,520)	-0,034 (-0,254)	-0,051 (-0,386)	-0,011 (-0,084)
	Homebuilding & Construction Supplies	-0,208* (-1,675)	-0,140 (-1,099)	-0,073 (-0,566)	-0,112 (-0,880)	-0,043 (-0,336)
	Household Goods	-0,235 (-1,616)	-0,261* (-1,789)	-0,289* (-1,957)	-0,238 (-1,638)	-0,263* (-1,784)
	Leisure Products	-0,675*** (-3,582)	-0,659*** (-3,513)	-0,634*** (-3,343)	-0,644*** (-3,435)	-0,616*** (-3,251)
	Hotels & Entertainment Services	-1,157*** (-8,550)	-1,019*** (-6,810)	-1,058*** (-6,986)	-1,006*** (-6,696)	-1,047*** (-6,885)
	Media & Publishing	-0,703*** (-5,227)	-0,644*** (-4,687)	-0,674*** (-4,868)	-0,642*** (-4,663)	-0,669*** (-4,820)
	Diversified Retail	-0,698*** (-3,953)	-0,702*** (-3,981)	-0,739*** (-4,162)	-0,681*** (-3,865)	-0,715*** (-4,032)
	Specialty Retailers	-1,253*** (-10,331)	-1,182*** (-9,430)	-1,156*** (-9,039)	-1,164*** (-9,274)	-1,136*** (-8,872)
	Beverages	-0,688*** (-4,429)	-0,712*** (-4,576)	-0,771*** (-4,937)	-0,683*** (-4,398)	-0,740*** (-4,753)
	Food & Tobacco	-0,676*** (-7,237)	-0,580*** (-5,582)	-0,614*** (-5,813)	-0,566*** (-5,442)	-0,602*** (-5,686)
	Personal & Household Products & Services	-0,734*** (-4,827)	-0,732*** (-4,810)	-0,738*** (-4,829)	-0,701*** (-4,615)	-0,705*** (-4,618)
	Food & Drug Retailing	-0,076 (-0,651)	-0,075 (-0,639)	-0,059 (-0,497)	-0,062 (-0,525)	-0,043 (-0,361)
	Semiconductors & Semiconductor Equipment	-0,692*** (-5,741)	-0,628*** (-5,042)	-0,634*** (-5,034)	-0,579*** (-4,607)	-0,577*** (-4,537)
	Communications & Networking	-0,716*** (-4,739)	-0,752*** (-4,957)	-0,670*** (-4,300)	-0,722*** (-4,775)	-0,637*** (-4,105)
	Electronic Equipment & Parts	-0,053 (-0,362)	-0,067 (-0,454)	-0,053 (-0,356)	-0,059 (-0,403)	-0,045 (-0,300)
	Office Equipment	0,143 (0,635)	0,121 (0,535)	0,142 (0,624)	0,136 (0,607)	0,163 (0,715)
	Computers, Phones & Household Electronics	-0,237* (-1,684)	-0,278** (-1,963)	-0,185 (-1,277)	-0,265* (-1,867)	-0,167 (-1,152)
	Software & IT Services	-0,663*** (-6,613)	-0,623*** (-6,134)	-0,628*** (-6,097)	-0,605*** (-5,948)	-0,608*** (-5,899)

(to be continued)

	Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5
Country (*dummy*)	Argentina[d]					
	Australia	2,618** (2,105)	2,641** (2,126)	2,013 (1,518)	2,389* (1,893)	1,733 (1,288)
	Austria	-14,64 (-0,047)	-14,53 (-0,047)	-15,227 (-0,049)	-14,601 (-0,047)	-15,32 (-0,049)
	Belgium	-0,944 (-0,760)	-0,933 (-0,752)	-1,505 (-1,137)	-1,217 (-0,965)	-1,821 (-1,355)
	Bermuda	0,130 (0,098)	0,1475 (0,111)	-0,395 (-0,282)	-0,115 (-0,086)	-0,685 (-0,483)
	Brazil	1,261 (1,070)	1,291 (1,098)	0,760 (0,600)	1,051 (0,878)	0,491 (0,381)
	Canada	1,771 (1,558)	1,812 (1,597)	1,2442 (1,014)	1,473 (1,272)	0,865 (0,692)
	Cayman Islands	14,009 (0,049)	13,994 (0,049)	13,546 (0,048)	14,03 (0,050)	13,573 (0,048)
	China	-0,407 (-0,359)	-0,228 (-0,201)	-0,745 (-0,608)	-0,534 (-0,461)	-1,086 (-0,870)
	Czech Republic	17,391 (0,047)	17,412 (0,047)	16,917 (0,045)	17,122 (0,047)	16,594 (0,045)
	France	1,114 (0,981)	1,147 (1,012)	0,545 (0,445)	0,866 (0,749)	0,231 (0,185)
	Germany	0,529 (0,467)	0,586 (0,519)	-0,031 (-0,025)	0,290 (0,252)	-0,360 (-0,289)
	Gibraltar	14,485 (0,023)	14,419 (0,023)	13,930 (0,022)	14,453 (0,023)	13,953 (0,022)
	Hong Kong	0,079 (0,070)	0,139 (0,123)	-0,323 (-0,264)	-0,178 (-0,154)	-0,677 (-0,543)
	Indonesia	2,128* (1,835)	2,186* (1,889)	1,935 (1,549)	1,869 (1,584)	1,583 (1,246)
	Ireland	1,033 (0,881)	1,076 (0,919)	0,588 (0,467)	0,782 (0,656)	0,267 (0,209)
	Isle of Man	-0,409 (-0,262)	-0,424 (-0,272)	-0,925 (-0,569)	-0,655 (-0,416)	-1,174 (-0,714)
	Israel	-14,614 (-0,016)	-14,60 (-0,016)	-15,20 (-0,017)	-14,889 (-0,016)	-15,509 (-0,017)
	Italy	0,952 (0,827)	1,011 (0,879)	0,383 (0,309)	0,728 (0,621)	0,067 (0,053)
	Japan	0,175 (0,154)	0,302 (0,266)	-0,347 (-0,283)	-0,007 (-0,006)	-0,694 (-0,557)

(conclusion)

	Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5
Country (*dummy*)	Luxembourg	1,668 (1,381)	1,680 (1,393)	1,212 (0,941)	1,503 (1,230)	0,997 (0,764)
	Mexico	2,205* (1,893)	2,251* (1,935)	1,646 (1,315)	1,919 (1,618)	1,277 (1,002)
	Netherlands	0,959 (0,836)	1,000 (0,873)	0,449 (0,363)	0,701 (0,600)	0,116 (0,092)
	Russian Federation	-0,607 (-0,418)	-0,541 (-0,372)	-1,188 (-0,781)	-0,880 (-0,599)	-1,566 (-1,017)
	Saudi Arabia	0,614 (0,340)	0,607 (0,336)	-0,015 (-0,008)	0,268 (0,147)	-0,390 (-0,207)
	Singapore	0,477 (0,379)	0,526 (0,418)	-0,041 (-0,030)	0,367 (0,289)	-0,221 (-0,163)
	South Africa	1,002 (0,869)	1,029 (0,894)	0,464 (0,374)	0,729 (0,621)	0,131 (0,1039)
	South Korea	0,584 (0,515)	0,664 (0,586)	0,091 (0,074)	0,336 (0,291)	-0,275 (-0,220)
	Sweden	13,914 (0,044)	13,992 (0,044)	13,455 (0,043)	13,731 (0,044)	13,175 (0,042)
	Switzerland	1,301 (1,084)	1,368 (1,142)	0,772 (0,601)	1,110 (0,911)	0,487 (0,374)
	Taiwan	-13,806 (-0,015)	-13,720 (-0,015)	-14,31 (-0,016)	-13,994 (-0,015)	-14,607 (-0,016)
	Peru	-0,318 (-0,277)	-0,260 (-0,226)	-0,785 (-0,634)	-0,596 (-0,509)	-1,158 (-0,919)
	UK	1,970* (1,734)	2,003* (1,766)	1,386 (1,131)	1,685 (1,457)	1,030 (0,825)
	United States	1,607 (1,419)	1,709 (1,511)	1,089 (0,890)	1,408 (1,220)	0,752 (0,604)
	Uruguay	2,784* (1,774)	2,719* (1,734)	2,194 (1,342)	2,417 (1,525)	1,868 (1,131)
	R^2 Cox & Snell (%)	23.69	23,73	25,65	23,88	25,83
	R^2 Nagelkerke (%)	31.58	31,64	34,20	31,84	34,44
	AIC	10224.30	10221,71	9998,55	10207,10	9980,68
	BIC	10636.76	10641,29	10446,57	10640,89	10442,92
	VIF (mean)	2.18	2,82	2,67	3,47	3,29

Notes: The coefficients and their significance are displayed, and below (in parentheses) the z-value. *, ** and *** significant at 10%, 5% and 1%, respectively. [a], [b], [c], [d]: reference variables for Positioning, Life Cycle, Industry and Country respectively.