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The Effect of the Positioning Strategy on the Firms' Performance Moderated by the Product Market Competition

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ABSTRACT

This research aims to investigate the effect of generic positioning strategies (cost leadership and product differentiation), adopted in pure or hybrid form, on firms' performance and to verify the moderating effect of product market competition in this relationship. A sample with 11,322 firm-year (2008-2019) observations, including data from firms in the G20 countries, was analyzed through logistic regression models. The competition level in the product market is measured using the Herfindahl-Hirschman index. The results indicate that firms adopting a hybrid strategy are more likely to achieve good performances than the others. The relationship between strategic positioning and operational performance is moderated by product market competitiveness level. In a low competition market, the adoption of a strategy is unnecessary. For low to medium levels of competition, pure strategy appears superior. In highly competitive environments, the hybrid strategy is more advantageous. This study brings a new discussion about choosing a more advantageous positioning strategy, in which the main issue is not which positioning strategy is superior, but under what conditions of the market environment the adoption of the hybrid strategy is related to superior performance. Contributing to advance in this research field, our outputs suggest that the effect of the positioning strategy on performance is moderated by the product market competition. The effort to establish a hybrid strategy is advantageous in highly competitive environments.

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INTRODUCTION

This research, anchored in the structure-conduct-performance (SCP) paradigm, analyzes the effect of generic positioning strategies (cost leadership and product differentiation), 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 behavior, 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 behavior is the firms' ability to create and sustain a competitive advantage (Davicik & Sharma, 2016). In this context, Porter (1980) 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 its processes in producing at the lowest possible cost, or in product differentiation, adding quality and value to their product.

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 (Miles & Snow, 1978; Jones & Butler, 1988; Porter, 1980). 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. Nevertheless, 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 (1980) analyses 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). When achieved, competitive advantage has a momentary character (Maury, 2018) and, in markets with a high level of competitiveness, firms are more willing to replicate the strategic behavior 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).

Under the premise that a positioning based on generic strategies (cost leadership and product differentiation) is one of the possible origins for competitive advantage, studies have sought to identify which positioning strategy is most advantageous to firms achieve sustainable superior performance. However, the main issue to be discussed in this field of study should not be which positioning strategy is superior, but under what conditions is a given strategy superior to another. Based on the SCP paradigm, the relationship between the strategic positioning adopted by the firm and its performance is influenced by aspects related to the structure of the market in which firms operate. Therefore, the efficiency of a given positioning strategy is affected by market conditions, such as the level of competitiveness.

Seeking to fill this knowledge gap, in this study we aim to answer the following question: How does competition in the product market moderate the relationship between positioning strategies (in pure or hybrid form) and firm performance? To answer this question, we analyzed accounting data from publicly traded firms with shares traded on the main stock exchanges of the G20 constituent countries (from 2008 to 2019), using logistic regression.

Our study contributes to the field of research by bringing a new discussion about choosing a more advantageous positioning strategy, in which we consider the influence of market competitiveness conditions on the relationship between positioning strategy and performance. Unlike previous research, we show that the superiority of a positioning strategy to achieve good performance is influenced by the level of market competitiveness. Based on an empirical analysis, our results show that the effort to establish a hybrid strategy is advantageous in highly competitive markets. In addition, this study 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 to the formation of performance, and by using accounting metrics for measuring generic strategies.

LITERATURE REVIEW AND HYPOTHESIS

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 of managing the effects of the five competitive forces in their favor, 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. Such positioning focus is to reach price-sensitive consumers, thus, productive efficiency allows protection against aggressive competition, providing a lower marketing price in the market (Lapersonne, 2018). The performance of the firms that use this strategy is determined by a high volume of sales, which leads to high turnover of assets (Banker et al., 2014). 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 required (Porter, 1980).

The adoption of a product 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 (Chaganti et al., 1989). For that, it is necessary to invest in areas such as quality of inputs, innovation, marketing, and advertising (Hambrick, 1983). The exclusive character that a product differentiation strategy gives to the product makes it more difficult to be imitated by competing firms. Thus, the firm is expected to succeed in sustaining higher margins (Banker et al., 2014).

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). The lack of clear definition of these positions results in an unfavorable strategic situation known as 'stuck in the middle' (Porter, 1985), where the product delivered to the market neither has a lower cost

nor differentiated quality, leading to low profitability (Kim & Lim, 1988; Porter, 1980; Thornhill & White, 2007).

According to Porter (1985), a firm should make a choice between strategies; otherwise, it risks being stuck in the middle. It is unlikely that firms will successfully position themselves in both generic strategies simultaneously because the process of building generic strategies involves different productive structures and contradictory activities, making them necessarily opposite (Lapersonne, 2018; Treacy & Wiersema, 1993; Thornhill & White, 2007). It results in a diffuse and poorly oriented culture based on conflicting actions that hinder their assimilation by the different hierarchical levels of firms. However, studies show that it is possible to achieve a hybrid strategy that combines elements of both low cost and differentiation to reap advantages from each (Pertusa-Ortega et al., 2009). Research has found empirical evidence that there must be a trade-off between generic strategies to achieve superior performance. Hambrick (1983), applying cluster analysis to 41 variables referring to 168 American firms, observed that firms adopting only one of the generic strategies achieved better performance. The same is noted by Kim and Lim (1988), using data from 54 firms in the electronics industry in South Korea, and by Thornhill and White (2007), when analyzing 2,351 Canadian firms in the manufacturing, construction, retail, and services industries. Kim and Lim (1988) and Thornhill and White (2007) applied questionnaires aimed at firms' managers to measure generic strategies. Also from questionnaires and using a set of variables as a proxy for performance, Hansen et al. (2015) used the analysis of variance to the data of 441 American forestry firms in the period from 2008 to 2011, and found no evidence that a hybrid strategy was more effective in providing superior performance.

While some studies have shown a predominance of pure strategic positions over hybrid strategies, others have obtained results that oppose those 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 applied multiple regression to the data of 1,921 Greek manufacturing firms, noting that under certain specific conditions in the industry, hybrid strategies may be superior.

When analyzing 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, Acquah and Yasai-Ardekani (2008) 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 in 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.

Using multiple regression analysis on data from firms in Indonesia, [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. The same is observed by [Kaliappen et al. \(2019\)](#), when investigating how strategic resources affect hybrid strategies and organizational performance of 475 firms in Malaysia. [Yasa et al. \(2019\)](#) used structural equation modeling to study 135 firms in Bali and noted 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 higher performance. In this way, the market structure cannot be ignored in analyses involving strategic postures and performance, as they have an influence on strategic planning and management decisions and, consequently, have an effect on the formation of operational performance ([McGahan & Porter, 1997](#); [Thompson & Formby, 2003](#)). Since the structure of the market determines the conduct of firms, the environment characteristics in which the firms compete may have an effect on the relationship between positioning choices and operational performance.

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 has an effect on 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](#)).

[Kallás \(2014\)](#) applied regression to fixed and multilevel models with data from 10,903 firms in 64 countries over a period of 23 years and found that the industry concentration has a moderating effect on the relationship between the institutional environment and the performance of firms. Using hierarchical models for the analysis of Brazilian firms, between the years 1996 and 2014, [Louzada and Gonçalves \(2018\)](#) observed that the relationship between the firms' idiosyncratic resources and its operational performance are sensitive to the industry characteristics, and that exogenous factors moderate the relationship between

endogenous characteristics 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.

In a competitive market, the firms should adopt a strategy that is hard to be replicated to reach and sustain a superior 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](#)).

In his study, [Maury \(2018\)](#) identified that firms that achieve greater market share are able to maintain their competitive advantage for longer. The greater the intensity of competition between firms, the greater the need for firms to defend their market share and even gain a new audience. Thus, the high level of competitiveness requires firms to rethink their strategies ([Andrews, 1996](#)) and seek a more complex approach ([Lapersonne et al., 2015](#)). As new firms enter the market, the implementation of a generic strategy is no longer sufficient to provide a competitive advantage and hybrid strategies may be the most appropriate in this scenario ([Miller, 1992](#)). In other words, in a highly competitive market, the adoption of a single strategy may no longer be enough to make the firm stand out against competitors. In this case, the adoption of a more complex strategy, composed of combined characteristics of both generic strategies, may be the way for the firm to stand out from the rest, maintaining superior performance and achieving competitive advantage. Therefore, based on the arguments discussed, the following research hypothesis is presented:

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

METHODOLOGY

Sample selection and data processing

The accounting system reflects in numbers the equity situation of firms and their variations over time, providing useful information to assess the effectiveness of firms' resources management and their operational plan ([Palepu & Healy, 2008](#)). In order to face the forces imposed by the market structure, firms must set a strategic plan that guides

management policies and managers' actions 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 are reflected in the financial statements generated by the accounting processes. Thus, to achieve the proposed goal, the analyses were carried out using data related to accounting information of firms.

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 between 2008 and 2019 from 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 Refinitiv Business Classification (Refinitiv, 2020). 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 analyses 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 (1% at the bottom and 1% at the top). The final sample analyzed totaled 11,322 firm-year observations and the variables were standardized. Table 1 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.

Table 1. 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	1,038
Automobiles & Auto Parts		1,822	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		1,124	240

Note. Year-firm observations, referring to annual data, period from 2008 to 2019.

Dependent variable

The dependent variable used is the firms' operational performance. Like [Amir et al. \(2011\)](#), [Bauman \(2014\)](#), and [Fairfield and Yohn \(2001\)](#), 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. 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 analyses. This was done considering that this intermediate group would refer to a medium performance, neither characterized as good nor as bad. Thus, the groups of observations with performance above and below the intermediate group were classified as 'good performance' and 'poor performance,' respectively.

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](#)), which indicates a positioning aimed at differentiating the product ([Banker et al., 2014](#)). They are:

- 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 ([Banker et al., 2014](#); [David et al., 2002](#));
- 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 ([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 ([Banker et al., 2014](#)).

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

- 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 ([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 ([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](#); [Hambrick, 1983](#)).

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 con-

sistency 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 & Bernstein, 1994). Factor loads below 0.30 were suppressed, as recommended for cases of elevated samples (Tabachnick & Fidell, 2007). The results obtained through the PCA are shown in Table 2.

Table 2. 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, 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 1 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) represent a position in cost leadership. Firms that are able

to apply both generic strategies simultaneously efficiently (High-High) are considered with a hybrid positioning strategy. Finally, there is the group called 'stuck in the middle', when product differentiation and cost leadership strategies are not applied efficiently (Low-Low).

In order to carry out the analyses 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).

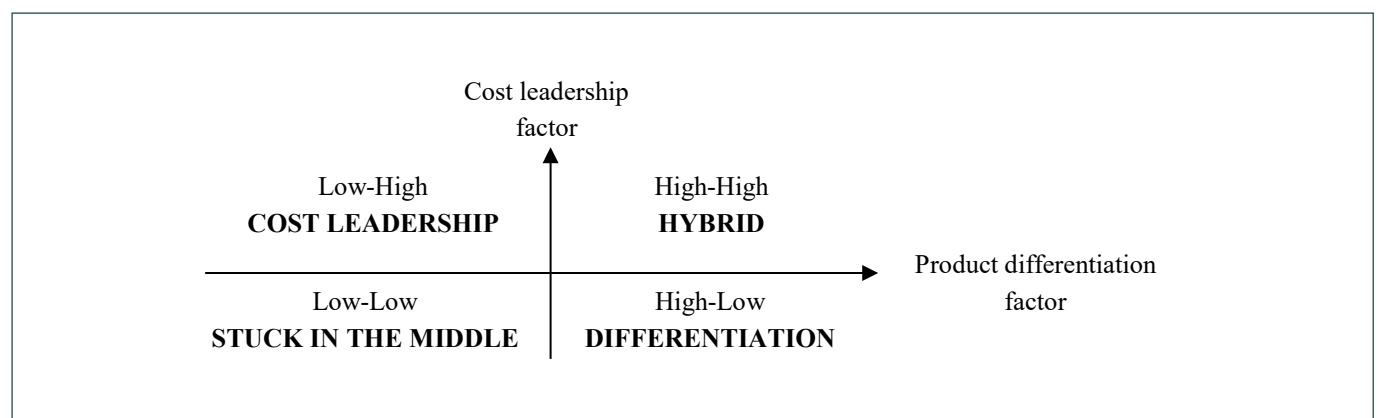


Figure 1. Classification of positioning strategy.

Source: Adapted from Yamin, S., Gunasekaran, A., & Mavondo, F. T. (1999). Relationship between generic strategies, competitive advantage and organizational performance: an empirical analysis. *Technovation*, 19(8), 507-518.

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 considered to be the inverse of HHI. 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.

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 et al., 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 industry control variable (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 performance obtained and on its strategy (Dickinson, 2011; Haiyan et al., 2020). Haiyan et al. (2020) also point 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 analyses and classification determined by Dickinson (2011) and Gort and Klepper (1982). The stages were classified as: introduction (CFOP < 0, CFINV < 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 ≤ 0 or > 0); and shake-out (other combinations). Table 3 presents the operationalization of variables.

Table 3. Operationalization of variables.

Variable	Description	Type	Calculation or classification	References
Positioning	DIF1	Continuous	SGA/SALES	Banker et al. (2014); Fernando et al. (2016); Tripathy (2006)
	DIF2	Continuous	R&D/SALES	
	DIF3	Continuous	SALES/CGS	
	CST1	Continuous	SALES/CAPEX	
	CST2	Continuous	SALES/P&E	
	CST3	Continuous	EMPL/P&E	
Dependent	Performance	Firm's performance	Based on the RNOA: $RNOA = \frac{\text{Net operating income}}{\text{Total assets}}$	Delen et al. (2013)
			Classified into: 1 – Good performance 0 – Poor performance	
Independent	Positioning	Firm's strategic positioning	Based on the factors established with the PCA, classified into: Product differentiation Cost leadership Hybrid 'Stuck in the middle'	Banker et al. (2014); Fernando et al. (2016); Tripathy (2006)
	Competition	Degree of competition between firms in the same industry	$\frac{1}{\sum_{i=1}^n (\text{market share}_i)^2}$	Lapersonne (2018); Yamin et al. (1999)
Control	Size	Firm's size	$\frac{\text{Firm's sales}}{\text{Industry's total sales}}$	Banker et al. (2014); Fernando et al. (2016); Tripathy (2006)
	Leverage	Leverage	$\frac{\text{Total long-term debt}}{\text{Total shareholders' equity}}$	
	Book to market	Book to market (at the beginning of the year)	$\frac{\text{Book value}}{\text{Market value}}$	
	Industry	Industry in which the firm operates	Dummy by industry	Dickinson (2011); Gort and Klepper (1982)
	Live Cycle	Firm's life cycle stage	Dummy by stage; stages: introduction; growth; mature; decline; and shake-out	
	Country	Country	Dummy by country	Healy et al. (2014); Maury (2018)

Empirical models

Empirical models of logistic regression were used to evaluate the research hypothesis. For model calibration, continuous variables were standardized by industry and categorical variables were inserted as dummies. To investigate the direct effect of industry competition on operational performance, we established the Model 1 (Equation 1).

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

where the positioning categorical variable corresponds to the strategic positioning adopted and its categories ('stuck in the middle', pure, and hybrid) are inserted as dummies. The competition variable is continuous and presents values in the range 0 to 1, with 0 corresponding to an industry without competition and 1 corresponding to an industry with maximum competition (considering the evaluated sample). The variables book to market, leverage, and size correspond to continuous control variables. The categorical control variables industry, live cycle, and country are inserted into the model as dummies, where each category is associated with its respective γ coefficient.

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 2 (Equation 2) was applied.

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

RESULTS

Descriptive statistics

Table 4 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 bad 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).

Table 4. 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

Note. * Including hybrid, pure, and 'stuck in the middle' strategy groups. ** Including levels of good, poor, and medium performance.

The correlation matrix (Table 5 – Panel A) shows that, considering the general sample, the competition is negatively correlated with performance (RNOA). When considering the different strategic groups (Table 5 – 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 5 – 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 5. Correlation matrix.

Panel A: Complete sample					
Variables	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		
Variables	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		
Variables	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**	

Note. 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 models under analysis are shown in Table 6. 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 0.276, sig. $p < 0.01$; hybrid strategy: coefficient 0.404, sig. $p < 0.01$). Besides that, the hybrid strategy provides a greater chance of obtaining a good performance. The competition variable is significantly negatively associated with performance (coefficient -0.325, sig. $p < 0.10$). Regarding the life cycle control variable, 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.

In Model 2, the results regarding the moderating effect of the industry competition in the relationship between strategic positioning and operational performance are presented. 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 0.617, sig. $p < 0.05$; hybrid strategy: coefficient 1.922, sig. $p < 0.01$). The effect of the life cycle control variable on performance was similar to Model 1. Hence, the results obtained validate the hypothesis of this research. The results also reveal that in a competitive environment, firms that adopt the hybrid strategy are more likely to perform well.

Regarding the other control variables, the variables book to market, leverage, and industry (most of the categories) were significant for all models. The country variable was not significant, which indicates that, considering the operating environment of firms, the industry seems to have more relevance than the country.

For further analysis, Figure 2a shows the graphs of the interaction between the competition and each group of strategic positioning. Figure 2b presents a similar graphic analysis, but the competition variable is divided into three categories: low ($\text{HHI} \geq 0.6$), medium ($0.2 \leq \text{HHI} < 0.6$), and high ($\text{HHI} < 0.2$). 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 2b — 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.

Table 6. Results of logistic regression models.

Independent variables			Model 1	Model 2
Constant			-1.663	-1.223
			(-1.355)	(-0.978)
Stuck in the middle ^a				
			0.276***	0.122
			(5.117)	(1.446)
Pure strategy				
			0.404***	-0.066
			(4.351)	(-0.481)
Hybrid strategy				
			-0.325*	-0.860***
			(-1.667)	(-3.369)
Competition				
				0.617**
				(2.300)
Competition * Pure strategy				
				1.922***
				(4.560)
Competition * Hybrid strategy				
			0.981***	0.979***
			(25.816)	(25.728)
Book to market				
			-0.737***	-0.737***
			(-21.985)	(-21.964)
Leverage				
			0.005	0.001
			(0.147)	(0.046)
Size				
Life cycle (dummy)	Decline ^b		0.651	0.647
			(1.509)	(1.504)
		Growth		
			-0.530	-0.584
			(-0.821)	(-0.901)
		Introduction		
			1.725***	1.741***
			(8.825)	(8.877)
Mature				
		1.946***	1.962***	
Shake-out				
		(12.032)	(12.078)	
Industry dummy			Yes	Yes
Country dummies			Yes	Yes
R ² Cox & Snell (%)			25.65	25.83
R ² Nagelkerke (%)			34.20	34.44
AIC			9,998.55	9,980.68
BIC			10,446.57	10,442.92
VIF (mean)			2.67	3.29

Note. ^a, ^b: reference variables for positioning and life cycle, respectively. The coefficients and their significance are displayed, and below (in parentheses) is the z-value. *, **, and *** significant at 10%, 5%, and 1%, respectively.

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 envi-

ronments, 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.

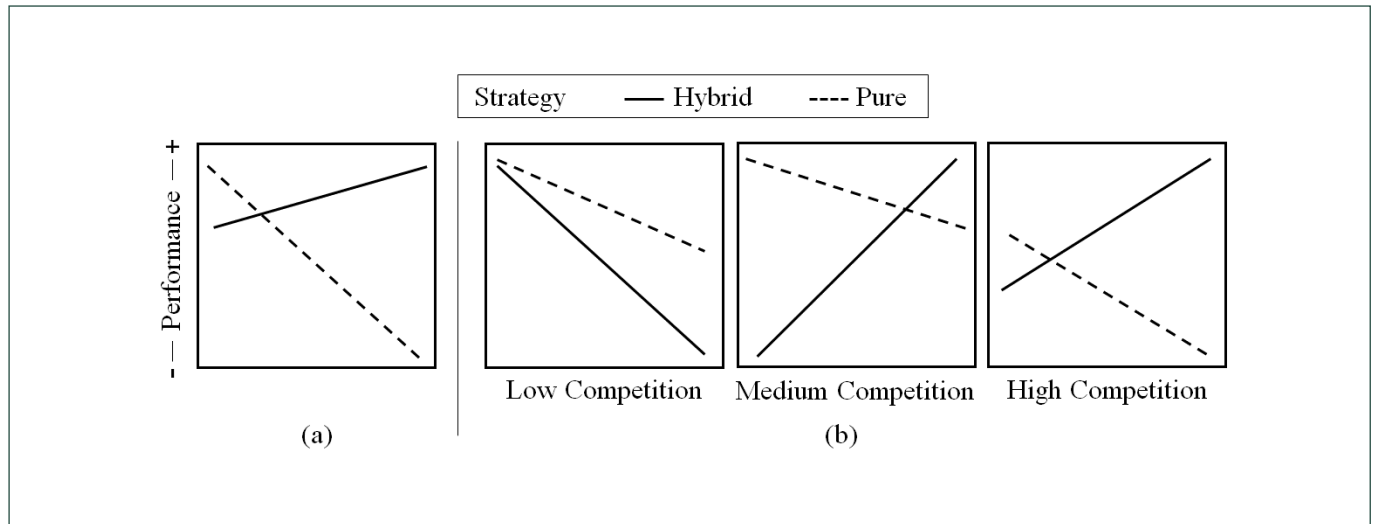


Figure 2. General interaction graph (a) and interaction graph considering low, medium, and high competition levels (b).

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 hypothesis 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 was carried out. Then, the research hypothesis was tested using logistic regression models, considering performance as a dependent variable. The performance was categorized as 'good' or 'bad' based on the RNOA values.

These results (Model 1) 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). We also showed that the relationship between strategic positioning and firms' operational performance is moderated by the level of product market competitiveness. Specifically, our outputs suggested 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 brings a new discussion about choosing a more advantageous positioning strategy, in which the main issue is not which positioning strategy is superior, but under what conditions of the market environment the adoption of the hybrid strategy is related to superior

or performance. It 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. The effort to establish a hybrid strategy, 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.

Our findings are relevant not only for advancing the theoretical discussion about strategic positioning and obtaining competitive advantage, but also from a practical application point of view. To define the strategic positioning to be adopted, a firm needs to consider aspects of the structure of the market in which it will operate, such as the level of competitiveness, so that it has more chances of highlighting and achieving good performances. 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. The presence of a large amount of missing data can affect representativeness and limit the generalizability of results to the target population. This is a constraint of the database, as some firms do not disclose certain information, such as research and development expenditure. Unfortunately, this is a limitation that does not depend on the efforts of future researchers to be resolved, but rather on the widespread disclosure of data by firms.

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. The endogeneity of the data can lead to an inadequate understanding of the studied relationships. Therefore, future research that establishes, based on theoretical foundations, other proxies to determine positioning strategies can contribute to obtaining more accurate results and conclusions.

This study addressed market competition as an external factor. However, other dimensions of market structure can also influence the relationship between

strategic positioning and performance. Further avenues of this research could include other aspects such as complexity, munificence, and dynamism, which are related to the unpredictability of the environment. There is also 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. By incorporating new aspects into the analysis, it will be possible to expand the existing knowledge and enhance the understanding of the complex relationships within this area of study.

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