

## Research Article

# Marketing Investments and Company Value in Developing Countries

Lucas Silvestre de Carvalho<sup>1</sup>  
Diogo de Siqueira Camargo Vasconcelos<sup>1</sup>  
Márcio Marcelo Belli<sup>1</sup>  
Luiz Eduardo Gaio<sup>1</sup>  
Gleison Lopes Fonseca<sup>2</sup>


<sup>1</sup> Universidade de Campinas, Limeira, SP, Brazil



<sup>2</sup> Universidad Politécnica de Cartagena, Murcia, Spain

Received July 24, 2020. This paper was with the authors for one revision. Accepted March 17, 2022.

First published online April 5, 2022.

**Editors-in-Chief:** Carlo Gabriel Porto Bellini  (Universidade Federal da Paraíba, Brazil);

Ivan Lapuente Garrido  (Universidade do Vale do Rio dos Sinos, Brazil)

**Associate Editors:** Sergio Biggemann  (University of Otago, New Zealand) and Ivan Lapuente Garrido  (Universidade do Vale do Rio dos Sinos, Brazil)

**Reviewers:** Masoud Karami  (University of Otago, New Zealand) and one anonymous reviewer

**Editorial assistants:** Kler Godoy and Simone Rafael (ANPAD, Maringá, PR, Brazil)

## ABSTRACT

The evolution of the economic context has intensified competition in retail, creating new challenges for companies. Among these challenges are the difficulty of measuring the results of marketing activities, the inconsistency in the sources of information, and the disregard of the temporal characteristics of the returns on these investments. Considering that this context may differ depending on a country's stage of development, the objective of this study is to analyze the impact of marketing investments on the value of companies. To this end, Tobin's Q was used as a financial variable and the sample was divided into two groups to discriminate between developed and developing countries. The sample included 1,872 companies from 97 countries. The technique used for analysis was a hierarchical multilevel model of panel data. The results reveal that investment in marketing has a positive relationship with the financial indicator Tobin's Q, and the impact of such investments in developing countries is greater than it is in developed countries. Thus, from the results of this work, it can be concluded that marketing investments have a beneficial potential for societies, especially those that are in economic environments considered to be in development.

**Keywords:** company value; marketing investment; Tobin's Q; developing countries

**JEL Code:** M21

## INTRODUCTION

The interest and importance of marketing in developing countries are justified in the view of Kinsey (1988), who defended the need for more marketing in developing countries by recognizing marketing as a means of minimizing the effects of an increasingly competitive, protectionist international climate that causes a drop in commodity prices, debt, and numerous other difficulties hindering economic development.

Seeking an understanding of marketing indicators in developing countries is one way to clarify the importance of marketing in such environments, because the measurement of the results of marketing activities has been shown to be more complex in developing countries than in developed country environments.

Measuring the results of marketing activities has proven to be a major problem for managers, due to the difficulty of measuring both tangible and intangible results involved. Investments in marketing activities impact consumers in several different ways, influencing their attitudes, knowledge, and behaviors, which generates complexity and importance in measuring the impact of these activities, whether they are focused on the communication process, product development, or distribution channels (Hanssens & Pauwels, 2016; Rust, Lemon, & Zeithaml, 2004).

From another perspective, companies need to maintain their financial health in order to survive in highly competitive markets, especially in retail. In this sense, aligning marketing and financial performance metrics is essential for business success. However, the lack of ability of marketing managers to jointly deal with these metrics can create some crossroads (Hanssens & Pauwels, 2016; Raghubir, Roberts, Lemon, & Winer, 2010).

According to data from the Global Power of Retailing, the 250 largest global retail companies earned \$4.4 trillion during fiscal 2016 (Deloitte, 2018). Brazil can be used as an example of how important retail is to the economy. According to the Brazilian Retail and Consumer Society, the segment had an impact of 63.4% on the country's GDP, that is, an amount of \$6.6 trillion in 2017 (Sociedade Brasileira de Varejo e Consumo [SBVC], 2018). Because of the characteristics and indicators present in the retail sector in Brazil and elsewhere, this work treated retail as the main environment for the analysis of the proposed indicators.

Retail is in a state of constant change, and an important factor for this has been the technological revolution, which has boosted commercial relations, increasing the volume of business, and necessitating new investments so companies can reach their customers in ways that are alternative to traditional ones.

The impact of technological evolution on commercial relations has promoted major changes in the entire structure of the sector, especially with regard to the perception of customers and distribution channels (Grewal, Roggeveen, & Nordfält, 2017). There is a strong convergence on the online market and, despite the evolution in sales revenue that has been pointed out in the

studies, the segment's growth has become a major challenge. These sector changes demonstrate the need for companies to evolve dynamically to keep up with new trends (Deloitte, 2018).

Despite the relevance of the topic to the literature and to the decision-making of managers, studies that relate investment in marketing and the financial performance of the organization have been restricted to the analysis of data from the North American market, demonstrating the importance of expanding the analysis to other regions (Malshe & Sohi, 2009; Sahay & Pillai, 2009).

To fill this gap, this article takes the analysis of the impact of marketing investment on the value of companies located in developed and developing countries as its research problem. The research question to be answered, therefore, is whether investments in marketing impact the market value of companies in developing countries. For this purpose, this paper used two important marketing metrics as a proxy for investments in marketing: (a) investment in advertising and (b) investment in sales and marketing. It also used a financial variable, Tobin's Q, to represent the company's value. The choice of these variables is justified by the fact that both are accessible and applicable to all companies that take marketing actions that can be considered as investment in marketing.

Among the main contributions of this work are: (a) Presentation of the relationship between marketing investment represented by market variables and the company's market value in environments outside developed countries; (b) Identification of the differences between the effects on financial performance of investments in the market variables with respect to companies located in developed countries and those located in developing countries; (c) A proposal for future research involving different markets to advance the development of knowledge on the subject and the theoretical and practical implications arising from this study.

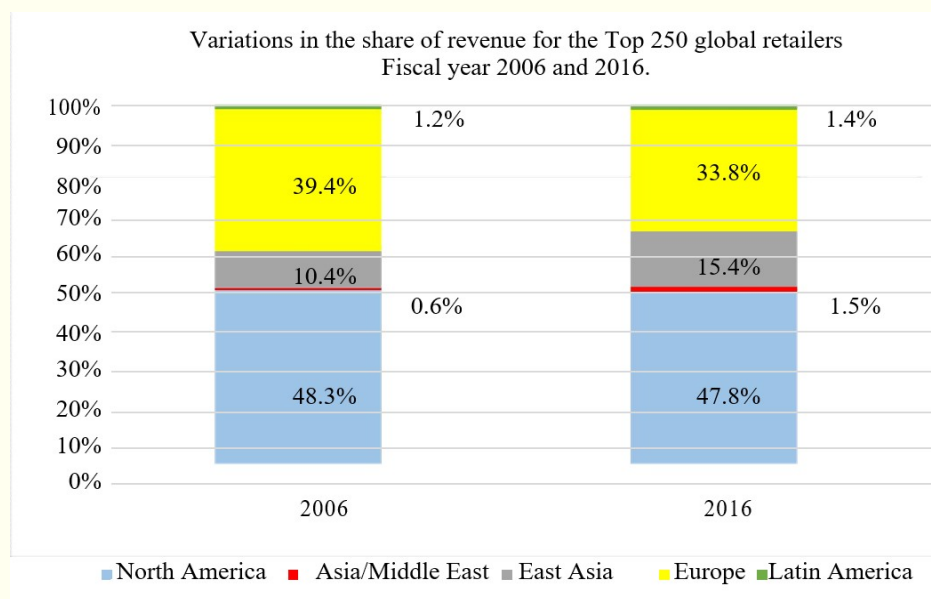
Regarding the structure of the article, Section 2 presents a characterization of global retail and a contextualization of marketing metrics and discusses the importance of measuring the results of marketing activities and the use of the Tobin's Q variable for this purpose. Sections 3 and 4 present, respectively, the methodology and analysis of the results. Finally, Section 5 presents the discussion and Section 6 presents final considerations, including the limitations of the study and proposals for future research.

## LITERATURE REVISION

Retail is going through a time of great transformation. Activities aimed at establishing retail business relationships have changed considerably, given the evolution of the media, big data, the internet, artificial intelligence, and several other technologies that have emerged in recent decades and that continue to evolve at an accelerated pace (Deloitte, 2018; Grewal et al., 2017).

Data on the global retail market indicates that the pace of growth has slowed in recent years, especially in developed countries. The European continent, for example, has lost space in world retail to countries in East Asia and developing markets. Events such as Brexit and the economic difficulties encountered by large retail chains in Europe have generated a decrease from 39.4%

to 33.8% of the share of these companies in global retail revenue in the last 10 years, as shown in Figure 1 (Deloitte, 2018).



**Figure 1.** Variations in the share of revenue of the Top 250 global retailers — Fiscal year 2006 and 2016.

Source: Adapted from Deloitte, T. (2018). Global powers of retailing. *Etudes Deloitte et Touche*. Paris. Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/at/Documents/about-deloitte/global-powers-of-retailing-2018.pdf>

The retraction of the European continent from participation in the global retail market was offset by the performance of retail companies located in East Asia (that is, China, Japan, and South Korea). North America, represented mainly by the United States, maintained a similar share in the retail market, with almost half of the revenues.

Part of the importance of U.S. companies in the global retail market can be explained by the management practices used by North American companies. Studies have pointed out that there are significant differences between the practices adopted by companies in the United States and those of European companies, as reflected in variables such as Tobin's Q, survival rate, and profitability (Bloom & Reenen, 2007).

For several years, the measurement of marketing results has been marginalized by professionals in the field. It has not been the focus of marketers because it considers the artistic and subjective character of certain marketing actions, inferring a causal relationship between marketing activities and the results achieved by companies. Studies have been primarily focused on developing actions and not on an understanding of how these actions impact consumers and the organization's financial results (Farris, Bendle, Pfeifer, & Reibstein, 2012).

Over the years, with the increase in competitiveness, the measurement of results has become essential for the marketing area, given the importance of identifying which actions are effective and avoiding the waste of resources (Farris et al., 2012). However, there are several problems related to the incorrect use of metrics for decision-making, such as demand forecasting and setting the advertising budget. Factors such as bias in data analysis and inconsistency in information are

examples of these problems that, when they occur, impact strategic decisions (Sridhar, Naik, & Kelkar, 2017).

Another important factor is that sometimes the metrics do not converge in the same direction. Attitudinal, behavioral, and financial metrics can be ambiguous and point in opposite directions, making data analysis and strategic directions difficult. It is up to the manager to choose a set of metrics that covers an adequate amount of information and enables assertive decision-making (Hanssens & Pauwels, 2016; Sridhar et al., 2017).

Decisions about the communication process are an example of this because results involve questions related to the company's positioning, promotional actions, advertising campaigns, and events, among others. As these are a set of actions carried out concurrently to achieve different business objectives, measuring their results is difficult and requires that results involving subjective aspects also be measured, such as their influence on consumer attitudes and perceptions (Sampaio, Simões, Perin, & Almeida, 2011). There are several efforts to understand these aspects. This is the case of Colladon (2018), who studied the relevance of metrics such as the Semantic Brand Score (SBS) to measure the importance of the brand based on semantic analysis of social networks. Another work that seeks to understand actions taken to achieve different objectives is Kumar, Anand, and Song (2017), who developed a study that analyzed the implementation of strategies by retailers at four levels: market, company, store, and customer. The authors argue that the strategies implemented observing these four levels have a greater potential for effectiveness. Vasconcelos and Oliveria (2018) analyzed a measure that they defined as the sectorial innovation index. The findings of this study suggest that certain dimensions of innovation stand out in relation to the performance of the company, that is, the experience of the brand and the customer contributes to the performance of the company significantly, which leads to the understanding that the performance of companies may be linked to several factors.

## Hypotheses

The first set of hypotheses in the present study assesses the relationship between investments in marketing, represented by the variables (a) investment in advertising and (b) investment in sales and marketing and company value, measured by Tobin's Q indicator. To analyze this relationship, the following hypotheses were investigated:

*H1:* There is a positive relationship between investment in advertising and the variation in Tobin's Q.

The first hypothesis aims to assess the relationship between advertising investment and Tobin's Q, which represents the company's value. In addition, two secondary hypotheses were created in order to identify the impact generated in countries with different characteristics, including whether they are located in developed or developing countries:

*H1a:* The impact of advertising investment on Tobin's Q is greater in developed countries as compared to developing countries.

*H1b:* The impact of advertising investment on Tobin's Q is greater in developing countries as compared to developed countries.

The second set of hypotheses proposes to evaluate another important variable for marketing and especially for retail: investment in sales. Considering that the sales process is essential for commercial relations in the retail environment (Kotler & Keller, 2012), it is relevant to measure how the relationship between investments in sales and Tobin's Q occurs. Thus, we have the following hypothesis:

*H2:* There is a positive relationship between investment in sales and the variation in Tobin's Q.

The objective is to identify whether the investment in the sales process impacts the company's value, using Tobin's Q as a dependent variable and representative of the value generated. As well as investigating the impact of investments in advertising, two secondary hypotheses were created to assess whether investment in marketing and sales impacts the financial variable in question in developed and developing countries.

*H2a:* The impact of investment in marketing and sales on Tobin's Q is greater in developed countries as compared to developing countries.

*H2b:* The impact of investment in marketing and sales on Tobin's Q is greater in developing countries as compared to developed countries.

Tobin's Q is a variable used to measure the company's intangible value (Tobin, 1969). It is a relationship between the company's market value and the replacement cost of the assets. This indicator is used as a basis for measuring the results of marketing activities such as brand equity (Lang & Stulz, 1994).

## METHODOLOGY

In this paper, a descriptive approach was adopted to study the causality between variables. Secondary data from public companies were used and collected in the Refinitiv-Eikon® database. Secondary data were chosen to expand the sample and enable broader analysis. The method used was quantitative, with hierarchical (multilevel) linear regression for panel data. The hierarchical method made it possible to build a model that controls the effect of different levels in a hierarchy. According to Goldstein (2011) and Hox (2010), the multilevel model has advantages compared to traditional regression models for panel data because it considers the analysis to be hierarchically structured. The analysis is then made by comparing the results of the research with the hypotheses constructed based on the literature.



## Research data

Data on market and financial performance indicators was collected from the Refinitiv-Eikon® database, which contains information from more than 10,000 companies in more than 100 countries. Data was collected for publicly traded companies belonging to the retail sector from 2009 to 2016. From the initial result of 1,912 companies, those considered outliers were excluded from the sample, leaving 1,872.

In this way, the total base is made up of annual observations in 97 countries, which include developed and developing countries. The sample was separated into two groups: developed and developing countries. Developed countries have the most efficient capital market, according to the financial literature. The capital market in developed economies has a greater capacity to understand and use market information compared to the capital market in developing economies. The companies' prices reflect the information available to investors. Capital markets in developing countries, on the other hand, find it more difficult to incorporate company information, so the price of companies does not necessarily reflect all available information.

The classification of the countries was made considering the criteria of the United Nations Development Program (UNDP), which annually publishes the United Nations Human Development Report (United Nations, 2019). As the classification of developed and developing countries is a very debatable subject, it was determined according to the criteria of the UN report, HDR2019, thereby classifying the countries in the sample according to their per capita income. Those with a per capita income above US \$30,000 were considered as developed, while developing countries were those with a per capita income between US \$30,000 and US \$14,000 in the same period. It is noteworthy that the classifications of certain countries changed during the years of the research and, due to this, they were classified according to their respective classification in the year of the other analyzes. In other words, some countries with income close to the maximum and minimum points of classification may have been considered developed in some years and in development in others. However, the analysis of these cases showed that the general effect of this phenomenon was insignificant for the conclusions drawn in the study.

Another important issue in data analysis is the choice of an analysis technique that satisfies the characteristics of the database, the set of information, and the needs of the observations implemented in the work to reach the conclusions. To analyze the data in this work, we opted for the panel data technique with a multilevel hierarchical model. There are several panel data models that can be used. According to Fávero and Belfiore (2019) and Greene (2007), the models differ by the structural characteristics for calculating the variations called fixed or random effects. Each of these models has its peculiarities. Better analysis results are achieved if the model is appropriate to the type of research.

To adapt the technique in this research, two models of panel data were used, generating a mixed model. As these are effects at the individual level – in this case, from the different countries – it was appropriate to use random effects. However, fixed effects were used so regressors were correlated with the effects at the individual country level; a consistent estimate of the model



parameters also required the elimination or control of fixed effects, thus justifying the choice of the mixed model (Fávero & Belfiore, 2019).

A multilevel model treats data as hierarchically structured, unlike traditional models of linear regression. The analysis structure is constructed so that the different levels at which the data are articulated can be recognized, with each sub-level represented by its own model (Fávero & Belfiore, 2019; Goldstein, 2011; Hox, 2010).

## Model variables

### *Dependent variable*

The dependent variable adopted in this study, called Tobin's Q, is a measure of known value that is widely used in other studies. This measure was developed by Tobin (1969) and is considered as an indicator for the measurement of the firm's value. Tobin's Q has been widely accepted in many studies as a prospective measure of both performance and value by many financial theorists (Dahlberg & Wiklund, 2018). As an example of the use of Tobin's Q as a measure of value, we can mention the work of Singh, Tabassum, Darwish, and Batsakis (2017) who studied the relationship between corporate governance and organizational performance of companies using Tobin's Q as an indicator of performance in the context of an emerging economy. Another work that used Tobin's Q as a measure of value, also in an economic environment in a developing country, is Ibrahim (2017), who made an empirical analysis of the determinants of capital structure in Nigeria's manufacturing industry for the period from 2012 to 2016. Tobin's Q represents the  $q$  ratio between the company's market value and the replacement cost of its assets (Tobin, 1969). Harrigan, Di Guardo, and Marku (2017) explained in their work that the Tobin's Q may indicate opportunities to investors when it is correlated with the value created by patent premiums generated by companies. These authors explain that Tobin's Q can be a prospective measure that considers the company's future opportunities as well as the returns from current activities. Verona (2019) used continuous wavelet tools to estimate and assess the relationship between Tobin's Q and cash flows for company investment decisions in the medium to long term. Tobin's Q has also been used in studies that correlate discrete internal variables of companies with the value of these companies. This is the case in the study by Dakhllalh, Rashid, Abdullah, and Al Shehab (2020), who found empirical evidence of the effect of the audit committee on the company's performance as measured by the Tobin's Q metric.

Therefore, it can be concluded that the Tobin's Q measure has been used by several studies to assess the value of companies (Claro, Frago, Laban & Claro, 2014; Dal Vesco & Beuren, 2016; Gupta, Banerjee, & Onur, 2017; Murcia & Santos, 2012; Pukthuanthong, Walker, Thiengtham, & Du, 2013; Rahman & Mustafa, 2018). Its calculation is given by dividing the firm's market value by the replacement cost of its assets. The market value was obtained by adding the market value of the shares and the market value of the debts, while the cost of replacing assets was obtained by the book value of the companies' assets. Its formula is given by:

$$Q = \frac{SMV + MVD}{BVA} \quad (1)$$

where SMV represents the market value of the shares and MVD the market value of the debts, while BVA represents the book value of the assets.

We use Tobin's Q as our measure of financial performance, because it incorporates the adjustment of markets to the company's value with respect to the effect of marketing investments on the present value of future cash flows and the value generated from the asset base. Tobin's Q is one of the most used measures as a value proxy. Tobin's Q is widely used in studies that compare marketing spending and financial performance (e.g., Angulo-Ruiz, Donthu, Prior, & Rialp, 2018; Bae, Kim & Oh, 2017; Cheng, Chan & Leung, 2018; Chung & Low, 2017; Markovitch, Huang, Ye, 2020; Ryoo, Jeon & Lee, 2016; Wang & Kim, 2017).

### *Independent variables*

For marketing investments, the idea was to use one or more variables that represented the 'marketing force.' The Refinitiv-Eikon database (Refinitiv ESG Scores, 2018) provides two variables that served as proxy for marketing force: (a) Advertising expenses represented by the acronym 'Adv.' This represents the cost of advertising media and promotional expenses. Advertising expenses may include outsourced advertising expenses for marketing; (b) Selling and market expenses, represented by 'Sel' (Sahay & Pillai, 2009). Sales and marketing expenses normally include salaries, commissions, and benefits to sales and marketing personnel; co-op advertising allowances to customers; and advertising, warehouse, and shipping costs. Sales and marketing expenses encompass the costs of selling goods, including preparation of goods for sale (e.g., collection, packaging, storage, and ordering costs). All shipping and handling is accounted for as incurred, and outgoing freight is not charged to customers. Shipping and handling charges are included in the sales charges.

### *Control variables*

To determine the causal effect between marketing investments and company value, it was necessary to control the other variables that may also interfere in the variation of company value. First, we controlled for company growth with the variable estimated percentage difference between sales. According to Rangan (1998), companies that experience greater growth need to allocate more working capital for investment. We also controlled for the size of the company with the natural logarithm of the assets. According to Jo and Harioto (2011), this reduces the impact of diversion of companies with extreme sizes. We also included a variable that controls for the financial risk of companies through a leverage ratio. Previous studies (see Opler & Titman, 1994) suggest that a company's financial performance is worse when leverage is higher, because the company has a higher risk. It was necessary to control for company liquidity, because the level of liquidity influences business risk and the ability to generate profits. Without liquidity, a company will find it difficult to pay its debts. In addition, Li, Chen & French (2012) and Wang and Sarkis (2017) have observed that debt is also related to corporate governance, which is an important value driver. Another variable that we included was capital expenditure (CAPEX), which represents the amount invested in the company's fixed assets during the period. According to the

results of research by Azmat (2014), CAPEX has a positive relationship with company value. Companies that have high levels of investment in structure have a higher market value.

The last variable included was return on assets (ROA), which also has a positive relationship with value. One of the premises for the market value is that the company generates future cash flows and has a return compatible with its capital costs. For this, a group of control variables was used in conjunction with the independent variables as described. The Table 1 shows a summary of the study variables.

Table 1

**Description of the model variables**

Variables	Symbol	Description	Source
<b>Dependent variables</b>			
Tobin's Q	<i>TOBQ</i>	The <i>q</i> ratio is defined between the company's market value and the replacement cost of its assets.	Bloom & Van Reenen (2007); Tobin (1969); Gupta, Banerjee, & Onur (2017); Rocha, Dal-Poz, de Oliveira, & Almeida (2016); Pukthuanthong et al. (2013); Rahman & Mustafa (2018)
<b>Independent variables</b>			
Advertising expenditure	<i>Adv</i>	Represents the cost of advertising and promotional expenses. Advertising expenditure may include third-party advertising expenses for marketing.	Sahay & Pillai (2009)
Sales and marketing expenses	<i>Sel</i>	Sales and marketing expenses typically include salaries, commissions and benefits for sales and marketing personnel, advertising subsidies for customers, advertising, storage costs, and shipping costs. Sales and marketing expenses include the cost of selling goods, including preparing the goods for sale, such as collection, packaging, storage, and order charges. All shipping and handling costs are recorded as incurred and outgoing freight is not billed to customers. Shipping and handling charges are included in sales charges.	Sahay & Pillai (2009)
<b>Control variables</b>			
Growth	<i>GROWTH</i>	Percentage change in revenue.	Rangan (1998); Ng & Rezaee (2015)
Size	<i>SIZE</i>	Logarithm value of the company's total assets.	Jo & Harioto (2011); Ng & Rezaee (2015)
Leverage	<i>LEV</i>	This is the long-term debt ratio divided by total capital at the end of the fiscal period and is expressed as a percentage. Total capital is the sum of total capital, total debt, and minority interest.	Opler & Titman (1994); Ng & Rezaee (2015)
Liquidity — current ratio	<i>LIQ</i>	Represents total current assets divided by total current liabilities.	Li et al. (2012); Wang & Sarkis (2017); Ng & Rezaee (2015)

Continues

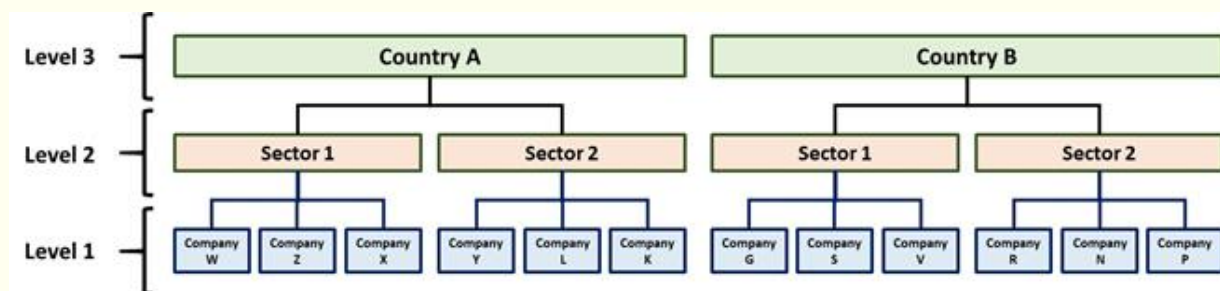
**Table 1 (continued)**

Variables	Symbol	Description	Source
Capital expenditure	CAPEX	Capital expenditures are the funds used by a company to acquire or update physical assets, such as properties, industrial buildings, or equipment, or the amount used over a period to acquire or improve long-term assets, such as properties, facilities, or equipment.	Laubscher (2002); Gregoriou, Raciocot, & Théoret (2016); Azmat (2014)
Return on assets	ROA	This amount is calculated as the after-tax income for the fiscal period divided by the total average assets and is expressed as a percentage. Total average assets is the average of total assets at the beginning and end of the year.	Kamardin (2014); Pukthuanthong et al. (2013)

**Note.** Refinitiv ESG Scores. (2018). Environmental, social and governance scores from refinitiv. Retrieved from [https://www.refinitiv.com/content/dam/marketing/en\\_us/documents/methodology/refinitiv-esg-scores-methodology.pdf](https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf)

## Statistical procedures and mathematical model

For data analysis, a hierarchical linear regression model with random intercepts was used. Three levels were considered in the analysis: Level 1 represents companies, Level 2 represents sectors, and Level 3 represents countries. Figure 2 shows an illustration of the hierarchical levels.



**Figure 2.** Regression model hierarchy.

Expression (2) shows the general structure of the hierarchical regression model used in the research.

$$\text{Level 1 (Companies)} \quad Y_{sep} = \beta_{0sp} + \sum_{j=1}^n \beta_j X_{jsep} + e_{sep} \quad (2)$$

$$\text{Level 2 (Sectors):} \quad \beta_{0sp} = \beta_{0p} + \alpha_{0sp} \quad (3)$$

$$\text{Level 3 (Countries):} \quad \beta_{0p} = \alpha_{000} + \alpha_{00p} \quad (4)$$

Two models were estimated for each sample group. Expressions 5 and 6 show the model equations.

Model I

$$Tobin\_Q_{sep} = \alpha_{000} + \beta_1 Adv_{sep} + \beta_2 Growth_{sep} + \beta_3 Size_{sep} + \beta_4 CAPEX_{sep} + \beta_5 LEV_{sep} + \beta_6 ROA_{sep} + \beta_7 LIQ_{sep} + \alpha_{0sp} + \alpha_{00p} + e_{sep} \quad (5)$$

## Model II

$$Tobin\_Q_{sep} = \alpha_{000} + \beta_1 Sel_{sep} + \beta_2 Growth_{sep} + \beta_3 Size_{sep} + \beta_4 CAPEX_{sep} + \beta_5 LEV_{sep} + \beta_6 ROA_{sep} + \beta_7 LIQ_{sep} + \alpha_{0sp} + \alpha_{00p} + e_{sep} \quad (6)$$

Model I tests the influence of the variable spending on propagating in Tobin's Q. Model II tests the influence of the variable sales and marketing expenses on Tobin's Q. The sample groups were: (a) the sample with all countries, (b) the sample of developed countries, and (c) the sample of developing countries. All models considered Tobin's Q as the dependent variable and the growth, size, CAPEX, leverage, ROA, and liquidity as control variables. Altogether, there were six adjusted models.

## ANALYSIS OF RESULTS

The results obtained in the analyses are presented below according to the observations perceived in the statistical tests performed in each of the sample data sets. An analysis of these results was performed in comparison with that described in the literature.

## Descriptive statistics and Pearson's correlation matrix

Table 2 presents the results of the descriptive statistics of the variables analyzed for the samples with the whole set of countries (total), for the set of developed countries (developed), and for the set of developing countries (developing). Companies that were considered outliers, with values of three standard deviations of difference from the average, were excluded from the sample.

Table 2

## Descriptive statistics of the total sample

	TOBIN_Q	ADV	SELL	GROWTH	SIZE	CAPEX	RISK	LEV	ROA	LIQ
<b>Total</b>										
Average	2.103	15.886	17.140	0.436	19.161	17.529	0.860	0.205	0.034	1.479
Median	1.499	16.050	17.313	0.104	19.404	17.656	0.795	0.165	0.040	1.309
Maximum	9.987	21.333	23.547	3.979	26.045	23.327	3.649	0.998	0.965	3.999
Minimum	0.000	3.806	4.547	-1.000	2.362	7.686	0.002	0.000	-0.995	0.000
St Deviation	1.857	2.223	2.504	0.793	2.676	1.966	0.517	0.188	0.129	0.793
Asymmetry	1.695	-0.828	-0.695	1.835	-1.307	-0.432	1.182	1.112	-2.392	0.875
Kurtosis	5.848	4.917	4.335	6.379	7.067	3.695	5.798	4.049	21.305	3.522
Jarque-Bera	8380.0	1041.5	131.4	11448.6	12327.1	244.3	2089.1	2214.5	175622.4	1618.3
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N (observ.)	10.262	3897	849	11.042	12.656	4.769	3.738	8.789	11.775	11.649

Continues

**Table 2 (continued)**

	TOBIN_Q	ADV	SELL	GROWTH	SIZE	CAPEX	RISK	LEV	ROA	LIQ
<i>Developed countries</i>										
Average	1.896	16.352	17.481	0.435	19.235	17.584	0.806	0.229	0.026	1.514
Median	1.331	16.464	17.590	0.090	19.486	17.684	0.720	0.194	0.036	1.341
Maximum	9.987	21.333	23.547	3.979	26.045	23.327	3.649	0.998	0.965	3.999
Minimum	0.000	5.886	7.215	-1.000	3.401	7.686	0.002	0.000	-0.995	0.000
St Deviation	1.721	2.028	2.513	0.819	2.851	2.043	0.523	0.194	0.137	0.814
Asymmetry	1.924	-0.831	-0.692	1.797	-1.344	-0.421	1.479	0.953	-2.467	0.778
Kurtosis	7.017	5.279	4.522	6.052	6.758	3.715	6.857	3.665	19.613	3.287
Jarque-Bera	8658.2	814.1	77.4	6402.6	7283.8	170.4	2396.5	1037	94598	786.3
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N (observ.)	6.715	2.456	439	6.913	8.189	3.352	2.435	6.106	7.559	7.531
<i>Developing countries</i>										
Average	2.497	15.092	16.774	0.437	19.025	17.398	0.962	0.151	0.049	1.415
Median	1.905	15.329	16.952	0.140	19.237	17.597	0.955	0.099	0.048	1.251
Maximum	9.972	20.666	21.656	3.973	24.338	21.263	3.286	0.988	0.965	3.991
Minimum	0.000	3.806	4.547	-1.000	2.362	10.614	0.002	0.000	-0.954	0.000
St deviation	2.035	2.314	2.445	0.747	2.314	1.764	0.490	0.160	0.111	0.748
Asymmetry	1.357	-0.766	-0.769	1.903	-1.209	-0.541	0.706	1.570	-1.912	1.064
Kurtosis	4.496	4.693	4.216	7.011	7.516	3.361	4.492	5.795	24.583	4.087
Jarque-Bera	1418.9	313.1	65.7	5259.9	4882.8	76.9	229.0	1976	84401.5	980.2
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N (observ.)	3.547	1.441	410	4.129	4.467	1.417	1.303	2.683	4.216	4.118

The Pearson correlation matrix shown in Table 3 indicates that there are no correlations between -0.7 and 0.7 between the variables observed. This shows that there is no collinearity between them according to Hair, Black, Babin, Anderson, & Tatham (2009).

Table 3

**Pearson's correlation matrix of the total sample**

	TOBIN_Q	ADV	SELL	GROWTH	SIZE	CAPEX	RISK	LEV	ROA	LIQ
TOBIN_Q	1.000									
ADV	0.110	1.000								
SELL	0.299	0.723	1.000							
GROWTH	0.301	0.142	0.223	1.000						
SIZE	0.138	0.639	0.559	0.075	1.000					
CAPEX	0.241	0.460	0.468	0.077	0.789	1.000				
RISK	-0.269	0.110	-0.108	0.105	-0.306	-0.306	1.000			
LEVERAGE	0.164	0.145	0.143	-0.059	0.139	-0.039	0.133	1.000		
ROA	0.434	0.202	0.062	0.159	0.098	0.259	-0.119	0.239	1.000	
LIQUIDITY	-0.151	0.019	-0.148	-0.087	-0.144	-0.312	0.234	0.255	0.193	1.000

## Financial performance and marketing investments for the total sample

Table 4 presents the estimated results for the multilevel model for the total sample, with no distinction between developed and developing countries. As the data set contains more companies than years, the year variable was included for each period in order to capture a possible correlation of observations from the same year belonging to different companies.

According to Snijders and Bosker (1999), one of the standard assumptions in the regression analysis by ordinary least squares is homoscedasticity (occurrence of constant residual variance). However, for the hierarchical linear model (or multilevel model) this assumption is not applicable, and it should be replaced by the assumption that the variances depend linearly or quadratically on the explanatory variables. In this way, the residues were also estimated for each variable.

Table 4

### Effect of advertising and selling and marketing expenses on Tobin's Q

Variables	Adv		Sel	
	Coef.	Prob.	Coef.	Prob.
Fixed effect parameters				
Adv	0.04805	0.303		
Sel			0.207611	0.021
Growth	-0.26576	0.000	-0.11779	0.57
Size	-0.46952	0.000	-0.77216	0.000
CAPEX	0.261147	0.000	0.424682	0.001
Leverage	1.655.352	0.000	1.921687	0.011
ROA	1.111.156	0.000	13.78694	0.000
Liquidity	-0.08406	0.271	0.509175	0.010
Cons	6.434777	0.000	7.477506	0.000
Random effect parameters				
Country	0.796207	0.015076	7.35E-10	0.499786
Sector	0.798167	0.000465	0.891608	0.003451
N (observ.)		1016		230
Wald chi2		226.8		0.000
Log like		-1785.9042		-421.30144
p-value		0.000		0.000

The results in Table 4 demonstrate that the effect of advertising expenses on Tobin's Q was not significant at the level of 10% ( $p > 0.1$ ). This result is valid when analyzing all the countries in the sample without differentiating between developed and developing countries. However, the effect of selling and marketing expenses on Tobin's Q was shown to be significant at the 5% level (prob.  $< 0.05$ ) in this same scenario.



## Financial performance and marketing investments for developed countries

Table 5 presents the estimated results for the multilevel model with the sample of developed countries.

Table 5

### Effect of advertising and selling and marketing expenses on Tobin's Q in developed countries

Variables	Adv		Sel	
	Coef.	Prob.	Coef.	Prob.
Fixed effect parameters				
Adv	0.05396	0.354		
Sel			0.13379	0.336
Growth	-0.25005	0.000	-0.3352	0.274
Size	-0.4021	0.000	0.28842	0.264
CAPEX	0.28236	0.000	0.20615	0.287
Leverage	1.00508	0.002	-0.0458	0.965
ROA	13.77238	0.000	10.5252	0.000
Liquidity	0.01083	0.885	-0.4573	0.084
Cons	4.221	0.000	2.88807	0.354
Random effect parameters				
Country	1.58837	0.01088	3.1E-15	0.49991
Sector	0.26777	0.01258	0.68721	0.0273
N (observ.)		644		114
Wald chi2		317.45		32.640
Log like		-1027.0072		-212.2870
p-value		0.000		0.000

The results in Table 5 show that the effect of advertising expenses in developed countries on Tobin's Q was not significant at the level of 10% ( $p > 0.1$ ). This result is valid when estimating all countries in the sample without separating developed and developing countries. The same occurred with the effect of selling and marketing expenses on Tobin's Q, which showed no significance.

## Financial performance and marketing investments for developing countries

Table 6 presents the estimated results for the multilevel model with the sample of developing countries.

Table 6

**Effect of advertising and selling and marketing expenses on Tobin's Q in developing countries**

Variables	Adv		Sel	
	Coef.	Prob.	Coef.	Prob.
Fixed effect parameters				
Adv	0.18418	0.013		
Sel			0.27625	0.018
Growth	0.05836	0.790	-0.0223	0.938
Size	-0.7719	0.000	1.04125	0.000
CAPEX	0.05225	0.585	0.52378	0.003
Leverage	3.43172	0.000	4.06751	0.000
ROA	5.10821	0.017	17.6212	0.000
Liquidity	-0.3656	0.034	-0.3767	0.211
Cons	14.7088	0.000	9.32847	0.001
Random effect parameters				
Country	0.5293	0.15044	0.23654	0.26617
Sector	1.71713	0.00799	0.72707	0.08331
N (observ.)		372		116
Wald chi2		58.18		75.280
Log like		-702.21308		-199.6798
p-value		0.000		0.000

The results in Table 6 demonstrate that the effect of advertising expenses on Tobin's Q was significant at 5% when estimating developing countries. The effect of selling and marketing expenses on Tobin's Q was also significant at 5% (prob. < 0.05) in this same scenario. This result corroborates the findings of Sahay and Pillai (2009), which showed in a study of companies in India, a country considered to be in development, that there is significance between investment in marketing and Tobin's Q.

## DISCUSSION

Table 7 presents a summary of the regression results and a comparison with the assumptions described in the previous sections.

Table 7

**Summary of results**

	Evidence	Hypothesis	Result
<b>Total</b>			
Adv	Does not affect	H1	Reject
Sel	+	H2	Accept
<b>Developed countries</b>			
Adv	Does not affect	H1a	Reject
Sel	Does not affect	H2a	Reject
<b>Developing countries</b>			
Adv	+	H1b	+
Sel	+	H2b	+

**Note.** The '-' and '+' symbols represent the sign of the significant coefficient.

As demonstrated, the relationship between investment in advertising and variations in Tobin's Q was not evidenced by the total sample of countries. In this sense, the H1 hypothesis, that stated that there is a positive relationship between investment in advertising and the variation in Tobin's Q, is rejected. Investment in sales, on the other hand, showed a significantly positive relationship with the variation in Tobin's Q. According to the results presented, there is a coefficient of 0.2076 for this indicator, leading to the acceptance of hypothesis H2, which stated that there is a positive relationship between investment in sales and the variation in Tobin's Q.

As for the other analyses considering the segmentation into developing and developed countries, the results found were inconsistent. For developed countries it was found that there is no significance in the relationship between investments in advertising and Tobin's Q, as well as for investments in sales and marketing and Tobin's Q. Therefore, hypotheses H1a and H2a are rejected.

With regard to developing countries, it was found that both hypotheses were significant, with a positive relationship for both the relationship between investments in advertising and Tobin's Q, as well as in investments in sales and Tobin's Q. The coefficients found were 0.1841 (Adv) and 0.2762 (Sel), respectively. In this case, hypotheses H1b and H2b are accepted.

It is noteworthy that the first aforementioned comparison between advertising spending and Tobin's Q in developing countries corroborates the findings of Sahay and Pillai (2009), who carried out a study similar to this one with a focus on India, a country classified as developing.

The relationship between marketing intensity and firm performance is a relevant theoretical implication of the study. The results presented were positive, corroborating previous research (e.g., Angulo-Ruiz et al., 2018; Bae et al., 2017; Cheng et al., 2018; Chung & Low, 2017; Markovitch et al., 2020; Ryoo et al., 2016; Wang & Kim, 2017). In practical terms, this research therefore suggests that asset managers and market investors pay special attention to marketing

expenditures, because such expenditures contribute to increasing the value of companies. Companies with high investments in marketing, sales, and advertisements tend to have higher values. On the other hand, company managers will also be able, through the evidence presented, to demonstrate the importance of investments in marketing in the pricing of shares. Investments in marketing are drivers of value and contribute to fulfilling the wishes of shareholders who seek to increase their wealth.

## FINAL CONSIDERATIONS

This research aimed to analyze the impact of marketing investments on the company's value, using both marketing metrics related to investment in advertising and investment in sales force, in addition to Tobin's financial variable  $Q$  to measure the value of companies.

Among the main findings of this research is the evidence that investments in marketing have a positive return on financial performance in developing countries when Tobin's  $Q$  indicator is used. This result demonstrates the importance of making investments in marketing to increase the growth potential of the company's market value. It also corroborates the studies presented by Sahay and Pillai (2009).

In addition, the failure to confirm the hypotheses of the relationship between investments in advertising and sales as generators of value for companies in developed countries is an important finding. These results may indicate significant differences between the returns to be achieved for investments in marketing in different countries, with segmentation in developed and developing countries being only one of the possibilities. Sahay and Pillai (2009) suggested a data gap for analyses such as those used in this study. However, despite the lag for the data collected, the results proved to be unsatisfactory and without statistical significance.

To improve the model, an attempt was made to include yet another control variable associated with the company's risk, the sector's beta, as indicated by the capital asset pricing model (CAPM). However, when generating results from this inclusion, it was observed that the results generated negatively affected statistical significance.

A limitation of this research is associated with the outliers that were found. Such outliers were large retail companies and were removed from the sample because they presented a large discrepancy in data when compared to the group of observations. Another limitation found is associated with access to information related to market indicators. There is a very satisfactory amount of financial information, while market information is less accessible.

As an opportunity for future studies, it is suggested that this study be replicated in future years, since there has been an increase in information related to investments in marketing in the last five years. In this way, it is expected to be possible to obtain a greater number of observations. Another suggestion is to compare the impact of investments in both sales and advertising in Tobin's  $Q$  among large retailers (considered outliers in this analysis) and the result found for other companies. Finally, it is possible to use other variables for the grouping of companies that

go beyond the analysis by country since it is considered that other variables of market and behavior may influence the results of a research that aims to precisely observe the effects of variables that present market and behavioral characteristics that influence the volume of investments in marketing.

## REFERENCES

- Angulo-Ruiz, F., Donthu, N., Prior, D., & Rialp, J. (2018). How does marketing capability impact abnormal stock returns? The mediating role of growth, *Journal of Business Research*, 82, 19-30, <https://doi.org/10.1016/j.jbusres.2017.08.020>
- Azmat, Q. U. A. (2014). Firm value and optimal cash level: Evidence from Pakistan. *International Journal of Emerging Markets*, 9(4), 488-504. <https://doi.org/10.1108/IJoEM-11-2011-0104>
- Bae, J., Kim, S.J., & Oh, H. (2017). Taming polysemous signals: The role of marketing intensity on the relationship between financial leverage and firm performance. *Review of Financial Economics*, 33, 29-40. <https://doi.org/10.1016/j.rfe.2016.12.002>
- Bloom, N., & Van Reenen. J. (2007). Measuring and explaining management practices across firms and countries. *The Quarterly Journal of Economics*, 122(4), 1351-1408. <https://doi.org/10.1162/qjec.2007.122.4.1351>
- Cheng, L. T. W., Chan, R. Y. K., & Leung, T. Y. (2018). Impact of perk expenditures and marketing expenditures on corporate performance in China: The moderating role of political connections. *Journal of Business Research*, 86(May), 2018, 83-95. <https://doi.org/10.1016/j.jbusres.2018.01.046>.
- Chung, T. S., & Low, A. (2017). The impact of investor impatience and environmental turbulence on myopic marketing management and stock performance. *International Journal of Research in Marketing*, 34(3), 660-677. <https://doi.org/10.1016/j.ijresmar.2017.01.004>.
- Claro, D., Fragoso, A. F. G. R., Laban Neto, S. A., & Claro, P. B. O. (2014). Consumer complaints and company market value. *BAR - Brazilian Administration Review*, 11(3), 248-263. <https://dx.doi.org/10.1590/1807-7692bar2014130004>
- Colladon, A. F. (2018). The semantic brand score. *Journal of Business Research*, 88, 150-160. <https://doi.org/10.1016/j.jbusres.2018.03.026>
- Dahlberg, L., & Wiklund. F. (2018). ESG investing in Nordic countries: An analysis of the shareholder view of creating value. Independent thesis Advanced level (professional degree). Umeå University. Retrieved from <http://umu.diva-portal.org/smash/record.jsf?pid=diva2%3A1229424&dswid=3324>
- Dakhlallah, M. M., Rashid, N., Abdullah. W. A. W., & Al Shehab. H. J. (2020). Audit committee and Tobin's Q as a measure of firm performance among Jordanian companies. *Journal of Advanced Research in Dynamical & Control Systems*, 12(1). <https://doi.org/10.5373/JARDCS/V12I1/20201005>
- Dal Vesco, D. G., & Beuren, I. M. (2016). Do the board of directors composition and the board interlocking influence on performance? *BAR - Brazilian Administration Review*, 13(2), e160007. <https://dx.doi.org/10.1590/1807-7692bar2016160007>
- Deloitte, T. (2018). Global powers of retailing. *Etudes Deloitte et Touche*. Paris. Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/at/Documents/about-deloitte/global-powers-of-retailing-2018.pdf>
- Farris, P. W., Bendle, N. T., Pfeifer, P. E., & Reibstein, D. J. (2012). Métricas de Marketing: O guia definitivo de avaliação de desempenho em marketing (2nd. ed.) Porto Alegre: Bookman.
- Fávero, L. P., & Belfiore, P. (2019). *Data Science for Business and Decision Making*. London, UK: Elsevier.

- Goldstein, H. (2011). *Multilevel statistical models* (4th ed.). Hoboken, NJ: John Wiley & Sons. <https://doi.org/10.1002/9780470973394>
- Greene, J. C. (2007). Mixed methods in social inquiry. *Journal of Mixed Methods Research*, 2(2). <https://doi.org/10.1177/1558689807314013>
- Gregoriou, G., Racicot. F. É., & Théoret. R. (2016). The q-factor and the Fama and French asset pricing models: Hedge fund evidence. *Managerial Finance*, 42(12), 1180-1207. <https://doi.org/10.1108/MF-01-2016-0034>
- Grewal, D., Roggeveen. A. L., & Nordfält. J. (2017). The future of retailing. *Journal of Retailing*, 93(1), 1-6. <https://doi.org/10.1016/j.jretai.2016.12.008>
- Gupta, K., Banerjee. R., & Onur. I. (2017). The effects of R&D and competition on firm value: International evidence. *International Review of Economics & Finance*, 51, 391-404. <https://doi.org/10.1016/j.iref.2017.07.003>
- Hair, J. F., Black. W. C., Babin. B. J., Anderson. R. E., & Tatham. R. L. (2009). *Multivariate data analysis*. London, UK: Pearson.
- Hanssens, D., & Pauwels, K. (2016). Demonstrating the Value of Marketing. *Journal of Marketing*. 80(6). pp.173-190. <https://doi.org/10.1509/jm.15.0417>
- Harrigan, K. R., Di Guardo, M. C. & Marku, E. (2017). Patent value and the Tobin's q ratio in media services. *The Journal of Technology Transfer*, 43, 1-19. <https://doi.org/10.1007/s10961-017-9564-1>
- Hox, J. J. (2010). *Multilevel analysis: Techniques and applications* (2nd. ed.). London, UK: Routledge.
- Ibrahim, M. (2017). Capital structure and firm value in Nigerian listed manufacturing companies: An empirical investigation using Tobin's Q model. *International Journal of Innovative Research in Social Sciences and Strategic Management Techniques*, 4(2), 112-125. Retrieved from <http://internationalpolicybrief.org/images/2017/SEPT-JOURNALS/IRSSMT/ARTICLE9.pdf>
- Jo, H., & Harjoto, M. A. (2011). Corporate governance and firm value: the impact of corporate social responsibility. *Journal of Business Ethics*, 103(3), 351-383. <https://doi.org/10.1007/s10551-011-0869-y>
- Kamardin, H. (2014). Managerial ownership and firm performance: The influence of family directors and non-family directors. In *Ethics, Governance and Corporate Crime: Challenges and Consequences* (pp. 47-83). Emerald Group Publishing Limited. <https://doi.org/10.1108/S2043-052320140000006002>
- Kinsey, J. (1988). *Marketing in developing countries* (MacMillan Studies in Marketing Management. Paperback). London, UK: Palgrave.
- Kotler, P., & Keller, L.K. (2012). *Administração de Marketing* (14th ed.). São Paulo: Pearson Education, 2012.
- Kumar, V., Anand. A., & Song. H. (2017). Future of retailer profitability: An organizing framework. *Journal of Retailing*, 93(1), 96-119. <https://doi.org/10.1016/j.jretai.2016.11.003>
- Lang, L. & Stulz, R. (1994). Tobin's q, Corporate Diversification, and firm performance. *Journal of Political Economy*, 102(6), 1248-1280. <http://dx.doi.org/10.1086/261970>
- Laubscher, E. R. (2002). A review of the theory of and evidence on the use of the capital asset pricing model to estimate expected share returns. *Meditari Accountancy Research*, 10(1), 131-146. <https://doi.org/10.1108/10222529200200007>
- Li, W. X., Chen, C. C. S., & French, J. J., (2012). The relationship between liquidity, corporate governance, and firm valuation: evidence from Russia. *Emerging Markets Review*, 13(4), 465-477. <https://doi.org/10.1016/j.ememar.2012.07.004>
- Malshe, A., & Sohi, R. S. (2009). What makes strategy making across the sales-marketing interface more successful? *Journal of the Academy of Marketing Science*, 37(4), 400-421. <https://doi.org/10.1007/s11747-009-0132-6>

- Malshe, A., & Sohi, R. S. (2009). Sales Buy-In of Marketing strategies: Exploration of its nuances, antecedents, and contextual conditions. *Journal of Personal Selling and Sales Management*, 29(3), 207-226. <https://doi.org/10.2753/PSS0885-3134290301>
- Markovitch, D. M., Huang, D., & Ye, P. (2020). Marketing intensity and firm performance: Contrasting the insights based on actual marketing expenditure and its SG&A proxy. *Journal of Business Research*, 118, 223-239. <https://doi.org/10.1016/j.jbusres.2020.06.032>
- Murcia, F. D., & Santos, A., dos. (2012). Discretionary-based disclosure: Evidence from the Brazilian market. *BAR - Brazilian Administration Review*, 9(1), 88-109. <https://dx.doi.org/10.1590/S1807-76922012000100006>
- Ng, A. C., & Rezaee, Z. (2015). Business sustainability performance and cost of equity capital. *Journal of Corporate Finance*, 34, 128-149. <https://doi.org/10.1016/j.jcorpfin.2015.08.003>
- Opler, T. C., & Titman, S., (1994). Financial distress and corporate performance. *The Journal of Finance*, 49(3), 1015-1040. <https://doi.org/10.1111/j.1540-6261.1994.tb00086.x>
- Pukthuanthong, K., Walker, T. J., Thiengtham, D. N., & Du, H. (2013). Does family ownership create or destroy value? Evidence from Canada. *International Journal of Managerial Finance*, 9(1), 13-48. <https://doi.org/10.1108/17439131311298511>
- Raghubir, P., Roberts, J., Lemon, K., & Winer, R. (2010). Why, when, and how should the effect of Marketing be measured? A stakeholder perspective for corporate social responsibility metrics. *Journal of Public Policy & Marketing*, 29(1), 66-77. <https://doi.org/10.1509/jppm.29.1.66>
- Rahman, M., & Mustafa, M. (2018). Dynamics influences of Tobin's Q and CEO compensation on US stocks. *Journal of Financial Economic Policy*, 10(1), 2-16. <https://doi.org/10.1108/JFEP-03-2017-0017>
- Rangan, S. (1998). Earnings management and the performance of seasoned equity offerings. *Journal of Financial Economics*, 50(1), 101-122. [https://doi.org/10.1016/S0304-405X\(98\)00033-6](https://doi.org/10.1016/S0304-405X(98)00033-6)
- Refinitiv ESG Scores. (2018). Environmental, social and governance scores from refinitiv. Retrieved from [https://www.refinitiv.com/content/dam/marketing/en\\_us/documents/methodology/refinitiv-esg-scores-methodology.pdf](https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf)
- Rocha, L. A.; Dal-Poz, M. E.; Oliveira, F. P. S.; & Almeida, C. A. S. (2016). O impacto dos investimentos em pesquisa & desenvolvimento no desempenho das empresas. *Revista de Economia Contemporânea*, 20(1), 58-91. <https://doi.org/10.1590/198055272013>
- Rust, R.T., Lemon, K. N., & Zeitham, V. A. (2004). Return on Marketing: Using customer equity to focus Marketing strategy. *Journal of Marketing*, 68(1). <https://doi.org/10.1509/jmkg.68.1.109.24030>
- Ryoo, J., Jeon, J. Q., & Lee, C. (2016). Do marketing activities enhance firm value? Evidence from M&A transactions. *European Management Journal*, 34(3), 243-257, <https://doi.org/10.1016/j.emj.2015.11.004>.
- Sahay, A., & Pillai, A. (2009). Differential impact of advertising and distribution expenditure on Tobin's Q: A perspective from listed firms in India. *Journal of Indian Business Research*, 1(2/3), 77-94. <https://doi.org/10.1108/17554190911005309>
- Sampaio, C., Simões, C., Perin, M., & Almeida, A. (2011). Marketing metrics: Insights from Brazilian managers. *Industrial Marketing Management*. 40(1). pp.8-16. <https://doi.org/10.1016/j.indmarman.2010.09.005>
- Singh, S., Tabassum, N., Darwish, T. K., & Batsakis, G. (2017). Corporate governance and Tobin's Q as a measure of organizational performance. *British Journal of Management*, 29(1), 171-190. <https://doi.org/10.1111/1467-8551.12237>
- Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. London, UK: Sage Publications.
- Sociedade Brasileira de Varejo e Consumo (2018). Estudo revela importante papel do varejo na economia brasileira. Retrieved from <https://sbvc.com.br/estudo-papel-varejo-2018/>



- Sridhar, S., Naik, P. A., & Kelkar, A. (2017). Metrics unreliability and marketing overspending. *International Journal of Research in Marketing*, 34(4), 761-779. <https://doi.org/10.1016/j.ijresmar.2017.09.001>
- Tobin, J. (1969). A general equilibrium approach to monetary theory. *Journal of Money Credit And Banking*, 1(1), 15-29. <https://doi.org/10.2307/1991374>
- United Nations (2018). Human Development Reports [online] Human Development Index (HDI). Retrieved from <http://hdr.undp.org/en/content/human-development-index-hdi>
- United Nations (2019). United Nations Development Programme. *Human Development Reports*. Retrieved from <http://www.hdr.undp.org/en/2019-report>
- Vasconcelos, R., & Oliveria, M. (2018). Does innovation make a difference? An analysis of the performance of micro and small enterprises in the foodservice industry. *Innovation & Management Review*, 15(2), 137-154. <https://doi.org/10.1108/INMR-04-2018-011>
- Verona, F. (2019). Investment, Tobin's Q, and cash flow across time and frequencies. *Oxford Bulletin Of Economics and Statistics*, 82(2), 331-346. <https://doi.org/10.1111/obes.12321>
- Wang, Z., & Kim, H. G. (2017). Can social media marketing improve customer relationship capabilities and firm performance? Dynamic capability perspective. *Journal of Interactive Marketing*, 39, 15-26, <https://doi.org/10.1016/j.intmar.2017.02.004>
- Wang, Z., & Sarkis, J. (2017). Corporate social responsibility governance, outcomes, and financial performance. *Journal of Cleaner Production*, 162, 1607-1616. <https://doi.org/10.1016/j.jclepro.2017.06.142>

## Authors' contributions

**1<sup>st</sup> author:** conceptualization (equal), investigation (lead), methodology (lead), software (lead), validation (equal), writing - original draft (lead).

**2<sup>nd</sup> author:** conceptualization (lead), investigation (lead), methodology (lead), software (lead), validation (equal), writing - original draft (lead).

**3<sup>rd</sup> author:** conceptualization (equal), investigation (equal), project administration (equal), resources (equal), supervision (equal), validation (equal), writing - review & editing (lead).


**4<sup>th</sup> author:** data curation (equal), formal analysis (equal), investigation (equal), supervision (lead), validation (lead), writing - review & editing (equal).

**5<sup>th</sup> author:** conceptualization (equal), investigation (equal), project administration (equal), validation (equal), writing - original draft (equal).

## Authors


### Lucas Silvestre de Carvalho

Universidade de Campinas, Faculdade de Ciências Aplicadas, Programa de Pós-graduação em Administração  
R. Pedro Zaccaria, no. 1300, Jardim São Paulo, 13484-350, Limeira, SP, Brazil  
lsc1349@yahoo.com.br

 <https://orcid.org/0000-0002-8504-5173>


### Diogo de Siqueira Camargo Vasconcelos

Universidade de Campinas, Faculdade de Ciências Aplicadas, Programa de Pós-graduação em Administração  
R. Pedro Zaccaria, no. 1300, Jardim São Paulo, 13484-350, Limeira, SP, Brazil  
diogo.scv@gmail.com

 <https://orcid.org/0000-0003-3158-5454>


**Márcio Marcelo Belli\***

Universidade de Campinas, Faculdade de Ciências Aplicadas, Programa de Pós-graduação em Administração  
R. Pedro Zaccaria, no. 1300, Jardim São Paulo, 13484-350, Limeira, SP, Brazil  
mmbelli@unicamp.br

 <https://orcid.org/0000-0001-7882-5051>


**Luiz Eduardo Gaio**

Universidade de Campinas, Faculdade de Ciências Aplicadas, Programa de Pós-graduação em Administração  
R. Pedro Zaccaria, no. 1300, Jardim São Paulo, 13484-350, Limeira, SP, Brazil  
luizgaio@unicamp.br

 <https://orcid.org/0000-0003-3106-7649>

**Gleison Lopes Fonseca**

Universidad Politécnica de Cartagena, Spain  
Plaza del Cronista Isidoro Valverde, 30202, Cartagena, Murcia, Spain  
gleisonlf@gmail.com

 <https://orcid.org/0000-0002-2065-3944>

\* Corresponding author

Peer review is responsible for acknowledging an article's potential contribution to the frontiers of scholarly knowledge on business or public administration. The authors are the ultimate responsible for the consistency of the theoretical references, the accurate report of empirical data, the personal perspectives, and the use of copyrighted material.

This content was evaluated using the double-blind peer review process. The disclosure of the reviewers' information on the first page is made only after concluding the evaluation process, and with the voluntary consent of the respective reviewers.