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Family Presence and Ownership Concentration: How Do They Affect Environmental Engagement of Brazilian Companies?

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1 Introduction

Public awareness of environmental and social issues has put pressure on how companies operate. For this reason, adopting practices focused on environmental and social aspects, and their reporting has become more frequent (Nekhili et al., 2017). However, it should be noted that a company's social and environmental practices can be seen as a reflection of the institutional context in which it operates (Campbell, 2007; Matten & Moon, 2008).

The importance of exploring how this context shapes corporate social and environmental practices has increased in recent years, with closer attention to the national configurations of developing countries, which can lead to different expressions of such behaviors (Jamali & Karam, 2018).

Jamali and Karam (2018) point out that the social and environmental practices of companies in developing countries can manifest in four expressions: (1) Relational, which is governed by social relations and more in line with shared socio-cultural values; (2) Developmental, which focuses on promoting engagement with local stakeholders, addressing their concerns; (3) Decoupled, which is primarily symbolic and oriented towards legitimacy, while companies adopt a business-as-usual position; and (4) Hybrid, which combines explicit elements, more common in liberal market economies, such as the United States, and implicit ones, generally seen in coordinated market economies, as is the case, for example, in Germany.

Among the factors that explain the differences in companies' behavior in developing countries concerning environmental and social practices, high ownership concentration and the relevance of family wealth as a source of capital can play central roles.

Fainshmidt et al. (2018) recognize the importance of these mechanisms in emerging markets. These authors state that in such nations, financial markets tend to be underdeveloped, and companies depend on the domestic capital market, which is often based on accumulated family wealth. Also, investor protection mechanisms are inefficient, encouraging large ownership concentration (Miniaoui et al., 2019). Ownership concentration and the identity of the controlling shareholder are therefore considered essential variables to explain different strategies for creating, capturing, and distributing value (Bressan et al., 2019).

Dam and Scholtens (2013) argue that ownership concentration also presents heterogeneity regarding its relationship with CSR. A large shareholder can be either focused only on financial performance or can also favor investment in CSR. In the same sense, family businesses also exhibit heterogeneous behavior concerning CSR-related causes (Marques et al., 2014), which ranges from the adoption of philanthropy practices (Ylvisaker, 1990) to a desire only to protect their interests (Margolis & Walsh, 2003).

Brazil presents a scenario in which about 60% of GDP comes from family businesses (Pamplona & Dal, 2017), and 90.2% of Brazilian companies have a majority shareholder (Silva, 2004). Thus, there is a high relevance of family businesses in the country and high ownership concentration. Therefore, we aim to analyze to what extent the family presence at the top management team (TMT) and ownership concentration affect the engagement in environmental CSR practices of Brazilian companies.

Much of the empirical evidence that guides the discussion of the relationship between ownership structure and CSR practices concentrates on developed markets (Bartkus et al., 2002; Berrone et al., 2010; Connelly et al., 2010; Dam & Scholtens, 2013; Ducassy & Montandrou, 2015; Gomez-Mejia et al., 2018).

However, more recent research in emerging markets has yielded conflicting results (Choi et al., 2013; Faller & Knyphausen-Aufseß, 2018; Zientara, 2017), indicating the importance of the context in which the company operates to establish the relationship among these constructs (Lau et al., 2016; Miniaoui et al., 2019; Naldi et al., 2013).

In this sense, investigating the Brazilian context using different proxies for CSR engagement can lead to new empirical evidence that further clarifies the relationship between ownership structure and CSR practices, thus justifying this research.

In order to do that, we assembled a sample of 100 Brazilian companies from 2010 to 2020, summing up to 650 firm-year observations. We used three proxies of environmental CSR engagement practices based on the CSRHub database. Results show that family presence negatively influenced environmental practices evaluated in the Brazilian context. And higher ownership concentration leads to greater environmental engagement. Therefore, this research contributes by showing that better engagement in environmental practices by Brazilian companies requires more independent directors and managers from the controlling family.

The remainder of this paper is divided as follows. In the second section, we present our literature review and our research hypotheses. In the third section, we described our methodology, presenting our sample, research variables, and our statistical design. In the fourth section, we present our results, which are discussed in the fifth section. In the last section, we offer our conclusions and research limitations.

2 Literature Review and Hypotheses

2.1 Family presence and environmental engagement

In an article published by The Economist magazine in April 2015, entitled *To have and to hold*, it is argued that the definition of a family business is not something simple. If the definition is restricted to companies whose ownership and management are done by family members, only a few would fit this profile. Otherwise, if the definition involves companies that are managed by their founders, corporations like Google and Facebook would contemplate this concept, even if none of them is considered a family business (The Economist, 2015).

Boston Consulting Group (BCG) defines a family business as one in which family members own a significant portion of the capital, with the capacity to influence important decisions, such as the choice of the CEO or the chairman. And there has been (or there are plans for) a transition of family generations at its command. Based on this definition, the article mentioned above adds that about 33% of US and 40% of German and French companies, with revenues exceeding US\$ 1 billion, are family companies. In India and Southeast Asia, more than 100 of the 200 largest companies in terms of revenue are also familiar. In Brazil, approximately 45% of companies with revenues above US\$ 500 million are family firms (The Economist, 2015).

One reason for the interest in studying family businesses is that the types and meaning of the governance mechanisms to which they are subject differ from those of non-family firms. In formal internal governance mechanisms, family businesses are different for several reasons. First, they differ from publicly traded companies with dispersed ownership because ownership is

concentrated in the hands of a small number of people and family managers who make up the dominant coalition (Chrisman et al., 2018). Besides, the search for non-economic family-oriented benefits can cause variations in the governance mechanisms employed by family firms (Berrone et al., 2010).

Therefore, much attention has been given to the discussion of whether family businesses behave in a more socially responsible way than non-family companies (Zientara, 2017). In this regard, and based on the concept of socioemotional wealth (SEW), many scholars have argued that there is a higher propensity for family businesses to engage in activities that refer to CSR (Cennamo et al., 2012; Ding et al., 2016; Gómez-Mejía et al., 2007; Gomez-Mejia et al., 2018).

The SEW is an extension of the Behavioral Agency Model (Wiseman & Gomez-Mejia, 1998), in which the core idea is that the choices made by corporate managers are influenced by the will to preserve the company's legacy (Cennamo et al., 2012). From the perspective of family businesses, protecting the socio-emotional legacy is a critical element for its members. It ends up becoming the primary guide in the process of managerial choices (Gómez-Mejía et al., 2007). Thus, family businesses usually have non-financial goals concurrently with their financial goals (Chrisman et al., 2012).

Most empirical evidence shows that higher family presence leads to greater engagement in social and environmental responsibility practices. Déniz and Suárez (2005) show that family-controlled companies are more engaged in philanthropic practices. The authors used a sample of 112 Spanish companies, with data collected through questionnaires in March 2002.

Using a sample of 202 non-family companies and 59 family companies of Standard & Poor's 500 (S&P 500), Dyer and Whetten (2006) show that family members are more engaged than the others concerning practices with employees, environment, and product. Based on a sample of 414 S&P 500 companies, covering the period 1994-2003, Block (2010) shows that family-owned companies have less propensity to reduce jobs due to a more significant concern with social reputation.

Ding et al. (2016) analyzed data from 2,241 young companies (less than eight years of experience in the market) from 80 countries, present in the World Bank Environment Survey for the 1999-2000 biennium. The authors noted that family control reduces the propensity to use bribes in countries with a weak governance environment.

Gomez-Mejia et al. (2018) show that companies with family connections in senior management are less likely to transfer risks to employees through payment schemes. The authors evaluated the responses to 219 questionnaires collected in 2008 from Spanish car dealerships.

Based on the dominant empirical evidence and the theoretical discussion involving SEW, we expect that those companies in which there is a greater family presence on TMT and as controlling shareholders, will also present a greater engagement in CSR environmental practices.

Hypothesis 1: a greater presence of family relationships in the company's top management team (executive board and board of directors) and as controlling shareholders increases its engagement in CSR environmental practices.

It is worth mentioning, however, that a more recent trend supports the idea that the incentives linked to SEW related to CSR actions may not always be positive. Zientara (2017) argues that SEW has a double-value nature, which leads family businesses to adopt a more instrumental stance rather than a normative strategy. The author clarifies that, concerning environmental issues, many family businesses have adopted practices aimed at increasing

efficiency in the use of resources and disclosure, which can be understood as instrumental since they characterize win-win relationships.

2.2 Ownership concentration and environmental engagement

Several mechanisms control the actions of managers. Some of them are internal, such as the board of directors, the executive compensation structure, and the ownership concentration. Others are external, such as acquisition pressures, monitoring of analysts, and local regulation (Connelly et al., 2010; Jo & Harjoto, 2011).

Among the internal mechanisms, ownership concentration gains relevance in the context of CSR practices, as it is related to the fact that the majority shareholders are considered an essential tool to reduce the legitimacy gap through investments in CSR (Crifo et al., 2016). Bozec and Bozec (2007) define ownership concentration as the percentage of voting shares held, directly or indirectly, by the controlling shareholder. According to the authors, it occurs as a natural response to the high costs of management agencies.

Dam and Scholtens (2013) argue that efforts by large shareholders focused on CSR practices can benefit several stakeholders without bringing financial rewards to shareholders. Ducassy and Montandrou (2015) agree with this thought when they state that the higher the shareholder's participation in the equity, the less likely the company will implement CSR programs that do not provide a clear return on investment, even if it is socially ideal.

Companies with dispersed control also face higher pressure for additional voluntary disclosure (Bartkus et al., 2002). In these companies, a higher number of stakeholders makes the benefits of disclosure outweigh the costs involved in this procedure. Thus, as explained by Khan et al. (2013), for better disclosure to be possible, it is necessary to engage more in social activities.

Another reason for a negative correlation between ownership concentration and investments in CSR practices is pointed out by Barnea and Rubin (2010), according to whom investment in CSR generates a positive impact on reputation and prestige, which creates a satisfaction effect for both large shareholders and managers. This situation can lead them to invest excessive resources in CSR practices, in addition to a limit considered ideal, creating a conflict of interest between majority and minority shareholders.

Bartkus et al. (2002) defined two paired samples from 33 companies of the same size and sector, one with firms called small givers and the other with corporations considered big givers. Companies with donations over US\$ 1,000,000.00 in 1996, 1997, and 1998 were called significant donors. Through a sequence of T and Wilcoxon tests, the authors show that, among several characteristics, there is a statistically significant difference in the number of major shareholders when comparing the two samples, with the average being higher in companies classified as major donors. However, there was no statistically significant difference between the two groups concerning the percentage of concentration of large shareholders.

Dam and Scholtens (2013) observed that greater financial concentration leads to worse CSR practices when evaluating financial information from 770 European companies referring to 2005. The authors measured the ownership concentration using the presence of blockholders, that is, if there was at least one shareholder with a share ratio greater than 5%, 10%, and 20% in three separate models. There was a negative and significant influence of the presence of blockholders with 10% and 20% ownership concentration on the performance of CSR, measured from data from the Ethical Investment Research Service (EIRIS).

Based on a sample of 116 Bangladeshi companies covering the 2005-2009 five-year period, Khan et al. (2013) observed a positive influence of dispersed ownership control over CSR

disclosure practices. Using a multiple regression model, the authors show a positive and significant influence of the percentage of shares in the hands of small shareholders on the CSR disclosure index they built.

Ducassy and Montandrau (2015) observed that the higher the ownership concentration, the lower the performance in CSR for 41 French companies. CSR performance was measured by the French Corporate Information Center (CFIE), considering the year 2011. Ownership concentration, measured from the percentage of shares of the largest shareholder, negatively influenced CSR performance in a regression model multiple.

Based on empirical evidence and theoretical discussions about the relationship between the existence of large shareholders and the propensity to adopt CSR practices, it is expected that there will be a negative influence of the ownership concentration on the engagement in environmental CSR practices.

Hypothesis 2: greater ownership concentration reduces engagement in CSR environmental practices.

As we discussed on the theme of family presence and environmental engagement, we highlight that the literature on ownership concentration is not unanimous. Some empirical evidence reports a positive influence of the ownership concentration on the adoption of CSR practices (Faller & Knyphausen-Aufseß, 2018).

3 Methodology

3.1 Data and variables

We assembled a sample of 100 Brazilian companies listed in B3 was constituted, totaling 650 observations related to the period 2010-2020. As a way of representing CSR engagement, three aspects of the environmental dimension of the CSRHub database were used as dependent variables. The first aspect, Energy & Climate Change (ECC), deals with corporate practices to combat climate change, such as the reduction of CO2 emissions and the use of renewable energy. The second aspect, Environment Policy & Reporting (EPR), addresses environmental disclosure practices. The third aspect, Resource Management (RMA), considers the practices of using resources in the company's activities.

Kreft (2019) comments that CSRHub is the largest global company for analyzing and evaluating CSR practices. The scores generated by the company cover four dimensions: environment, community, corporate governance, and employee relations. Each dimension is composed of three aspects. The scores reported by CSRHub are generated from the compilation of information in databases such as Carbon Corporate Library, Carbon Disclosure Project, EIRIS, Impact Monitor, IW Financial, Risk Metrics IVA, Thompson Reuters, Trucost, and Vigeo.

Furthermore, to assess the presence of family on TMT and controlling ownership, as well as ownership concentration – our independent variables – we extracted data from the Reference Forms (Formulário de Referência). It contains information similar to the SEC's Form 10-K, which we used to compute our independent variables. We collected these data with the GetFREDData R package (Perlin et al., 2019). We proxied the presence of at TMT and controlling ownership using the number of family members that are part of the board of directors, board of executives, or are controlling shareholders. We used the number of common stocks held by controlling shareholders

divided by the total common stocks for ownership concentration. Table 1 shows the variables used in the research, and their description and sources.

Table 1

Research variables

Variable		Description	Source
Energy & Climate Change	ECC	Measures the company's effectiveness in addressing climate change through appropriate policies and strategies, energy efficient operations, and the development of renewable energy and other alternative environmental technologies	CSRHub
Environment Policy and Reporting	EPR	Includes the company's environmental reporting performance, adherence to environmental reporting standards such as the Global Reporting Initiative, and compliance with transparency requests from investors, regulators, and stakeholders	
Resource Management	RMA	Covers the efficiency with which resources are used in the manufacture and supply of products and services, including those of suppliers	
Ownership Concentration	OWNC	Number of common stocks held by the controlling shareholder divided by the total common stocks	Reference Forms – Items 15.1 and 15.2
Family members on TMT and as controlling shareholders	FAMPART	Number of family members that are part of the board of directors, board of executives, or are controlling shareholders.	Reference Form – Item 12.9
	FAMPART_D	Dummy variable that equals 0 if FAMPART = 0, and 1 if FAMPART \neq 0.	
Company's size	SIZE	Ln(Total Assets)	Financial Reports
Leverage	LEV	Liabilities divided by Total Assets	
Return on Assets	ROA	Percentage variation in revenue from year $t-1$ to year t	

We also include control variables in our analysis. We used the size of the companies as a control variable because larger companies have a better capacity to meet environmental demands and are pressured by a more significant number of stakeholders (Chih et al., 2010). Also, companies with high leverage may be more vulnerable to pressure from their creditors, reducing their propensity to invest in environmental practices (Lourenço & Branco, 2013). Finally, the company's ability to generate wealth is also related to its ability to meet environmental demands. More profitable companies have more resources to deal with environmental issues (Ruf et al., 2001).

3.2 Statistical analysis

We used the variables in Table 1 in a series of statistical analyzes. Initially, we sought to understand the behavior of dependent and independent variables through descriptive statistics. We employed summary measures and graphs representing the behavior of the average of each variable in the study period.

In order to analyze, in a multivariate way, the impact of family presence and ownership concentration on environmental engagement, five regression models for panel data were devised. For Models I to III, we used one independent variable in each of them (FAMPART_D, FAMPART, and OWNC). In Model IV, we used FAMPART and OWNC as independent variables. In Model V, we used FAMPART_D and OWNC, as well as their interaction, as independent variables.

$$ENV_{i,t} = \beta_0 + \beta_1 \times FAMPART_D_{i,t} + \beta_2 \times SIZE_{i,t} + \beta_3 \times LEV_{i,t} + \beta_4 \times ROA_{i,t} + \varepsilon_{i,t} \quad (I)$$

$$ENV_{i,t} = \beta_0 + \beta_1 \times FAMPART_{i,t} + \beta_2 \times SIZE_{i,t} + \beta_3 \times LEV_{i,t} + \beta_4 \times ROA_{i,t} + \varepsilon_{i,t} \quad (II)$$

$$ENV_{i,t} = \beta_0 + \beta_1 \times OWNC_{i,t} + \beta_2 \times SIZE_{i,t} + \beta_3 \times LEV_{i,t} + \beta_4 \times ROA_{i,t} + \varepsilon_{i,t} \quad (III)$$

$$ENV_{i,t} = \beta_0 + \beta_1 \times FAMPART_{i,t} + \beta_2 \times OWNC_{i,t} + \beta_3 \times SIZE_{i,t} + \beta_4 \times LEV_{i,t} + \beta_5 \times ROA_{i,t} + \varepsilon_{i,t} \quad (IV)$$

$$ENV_{i,t} = \beta_0 + \beta_1 \times FAMPART_D_{i,t} + \beta_2 \times OWNC_{i,t} + \beta_3 \times (FAMPART_D_{i,t} \times OWNC_{i,t}) + \beta_4 \times SIZE_{i,t} + \beta_5 \times LEV_{i,t} + \beta_6 \times ROA_{i,t} + \varepsilon_{i,t} \quad (V)$$

In each model, $ENV_{i,t}$ represents one of the dependent variables – ECC, EPR, or RMA – for the company i in the year t . FAMPART, FAMPART_D, and OWNC are independent variables, and SIZE, LEV, and ROA are control variables. Since we employed five models for three different dependent variables, we ran 15 regression models. For each of these models, a Breusch-Pagan Lagrange Multiplier test was carried out, indicating whether it is necessary to control the effects of individuals and time on each panel. After that, a Hausman test was performed for each model in order to determine whether the panel effect should be fixed or random.

4 Results

4.1 Descriptive statistics

We first present a sample description by year and sector (Table 2). There is an increase in the number of companies that compose the sample. It ranged from 37 companies in 2010 to 65 in 2020, with a maximum of 73 companies in 2016. We highlight that this reflects the increase in the number of companies monitored by CSRHub, and is not exclusive to Brazilian companies, given that the same behavior can be observed in all countries covered by CSRHub.

Table 2
Sample description by industry and year

Industry	Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Agriculture & Mining		7	9	8	8	8	8	10	12	6	7	9	92
Construction & Engineering		1	3	3	4	4	5	5	5	5	4	4	43
Consumer Goods		6	7	7	7	8	9	7	6	5	3	7	72
Durable Goods		1	1	1	2	2	2	3	2	2	2	3	21
Education & Government		0	0	0	1	2	2	2	2	1	0	1	11
Finance & Real Estate		4	7	11	11	13	12	11	10	10	9	10	108
Food, Beverages & Tobacco		2	3	4	5	5	4	4	4	4	3	3	41
Healthcare		0	1	2	2	1	1	2	2	1	1	1	14
Retail		1	1	1	1	2	2	3	2	1	1	4	19
Services		0	0	1	2	2	2	3	2	1	1	3	17
Technology		3	4	5	5	4	4	4	3	3	3	4	42
Transportation		3	3	2	1	1	2	3	4	2	1	2	24
Travel		1	1	1	1	1	1	1	0	0	0	0	7
Utilities & Refining		8	12	11	14	14	14	15	13	12	12	14	139
Total		37	52	57	64	67	68	73	67	53	47	65	650

Among the industries, there are four of them with sample participation above 10%: Utilities & Refining (21.38%), Finance & Real Estate (16.62%), Agriculture & Mining (14.15%), and Consumer Goods (11.08%). All other industries had sample participation between 1.08% (Travel) and 6.62% (Construction & Engineering). Then, we present the descriptive statistics of the dependent and independent variables in Table 3.

Table 3
Descriptive statistics

	ECC	EPR	RMA	OWNC	FAMPART
Average	56.22	57.80	56.74	0.61	2.18
SD	11.17	10.64	9.78	0.21	2.88
Q1	48.00	51.00	51.00	0.50	0.00
Q2	57.00	59.00	57.00	0.59	2.00
Q3	64.00	65.00	63.00	0.73	4.00

The ECC and RMA have the lowest averages and medians among the three dependent variables. This may indicate less concern by companies in general for ECC and RMA than ECC. As for the independent variables, there is a high level of ownership concentration in the sample, reflecting this characteristic of the Brazilian market. At least 75% of the companies in the sample had controlling shareholders that owned at least 50% of the shares (hence Q1 = 0.50).

We made graphical representations of the averages of the dependent and independent variables in this study over the period of analysis to see how they evolved over time. We show the results in Figures 1, 2, and 3. Figure 1 shows the averages for ECC, EPR, and RMA. We can see that the averages of ECC are the lowest from 2010 to 2015, ranging from 49 to 57 in this period. In contrast, RMA has the lowest average from 2016 to 2020, decreasing from 61 to 53. These results, together with those presented in Table 2, indicate that ECC and RMA represent environmental practices that companies adopt less compared to those described by EPR.

Figure 1
Average of ECC, EPR, and RMA from 2010 to 2017

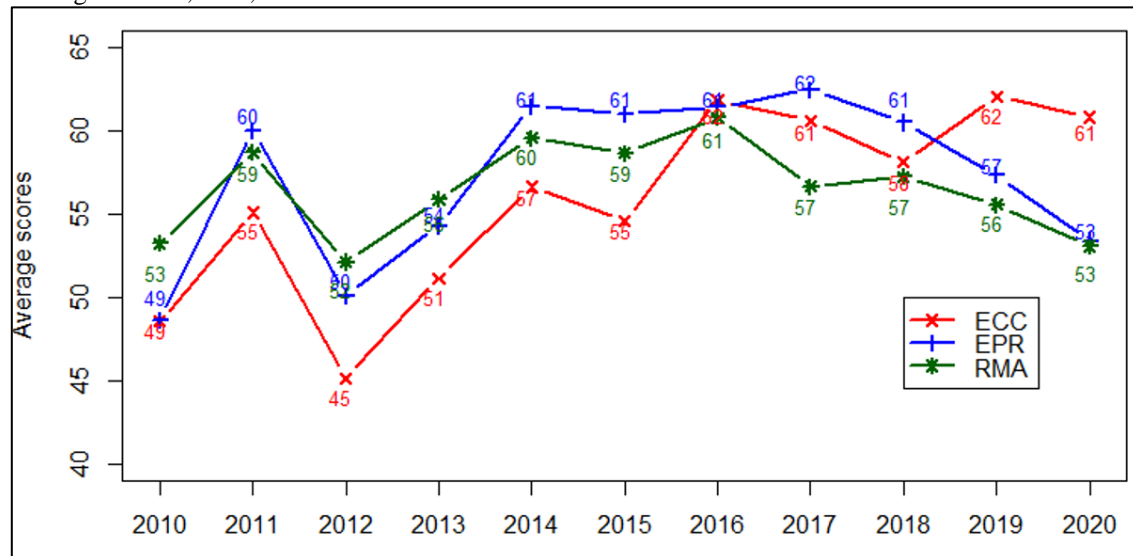


Figure 2 shows the evolution of the proportion of companies with relatives on TMT or as controlling shareholders over the period under analysis. We can see that in eight out of the eleven

years in the study, at least 50% of our sample presented family members on TMT or as controlling shareholders.

Figure 2

Percentage of firms with family participation in top management and as controlling shareholders from 2010 to 2020

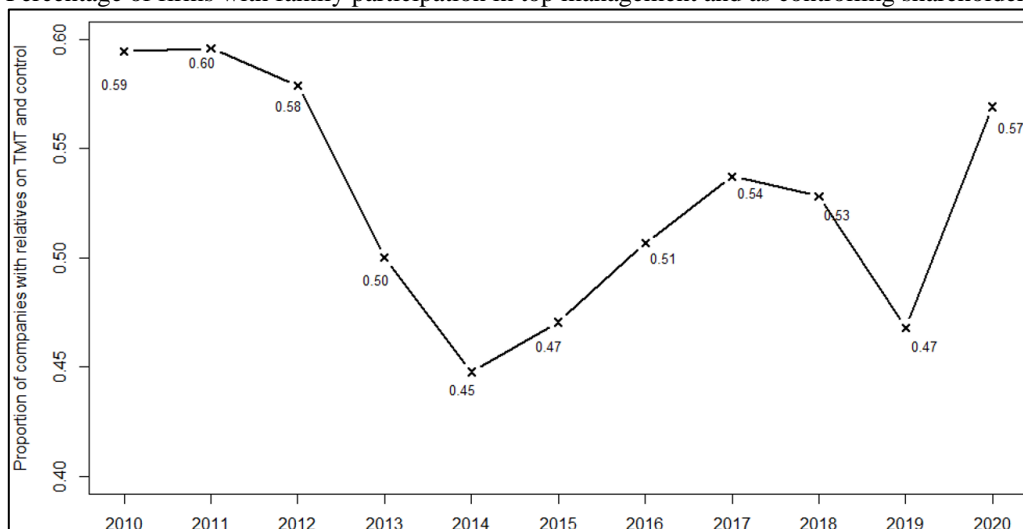
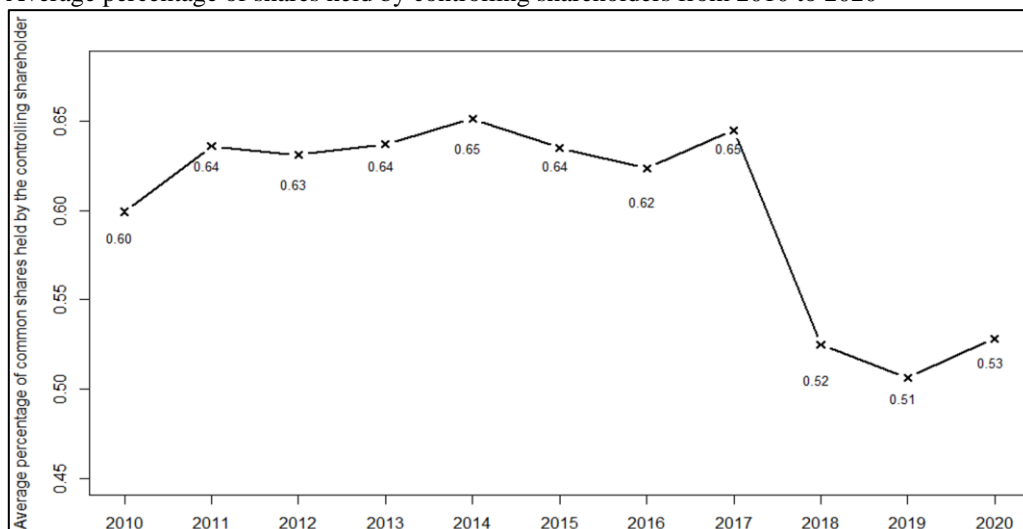


Figure 3 shows the evolution of the average percentage of common shares held by controlling shareholders. From 2010 to 2017, controlling shareholders held at least 60% of common shares. From 2018 onwards, this percentage dropped to 52%. This result can be explained by an increase in investors operating in B3. From 2012 to 2016, there were less than 600,000 investors. Such number increased to 813,974 in 2018 and reached 3,233,727 in 2020.

Figure 3

Average percentage of shares held by controlling shareholders from 2010 to 2020



4.2 Multivariate analysis

We used a series of panel data regressions to evaluate the research hypotheses. As mentioned in the methodology, we chose the best panel regression model based on two tests: Breusch-Pagan's Lagrange Multiplier and Hausman's Test. The results for those tests are shown in Table 4.

Table 4
Breusch-Pagan's LM and Hausman Tests

Variable	Model	Hausman Test	Breusch-Pagan's LM for individuals and time effects	Model of choice
ECC	I	1.38	787.89 (***)	Random Effects for individuals and time
	II	4.05	786.06 (***)	
	III	3.67	758.35 (***)	
	IV	7.61	752.66 (***)	
	V	4.44	750.73 (***)	
EPR	I	1.62	598.18 (***)	
	II	4.24	605.94 (***)	
	III	1.89	600.31 (***)	
	IV	5.99	598.32 (***)	
	V	2.68	590.54 (***)	
RMA	I	0.76	219.91 (***)	
	II	3.31	210.11 (***)	
	III	0.48	219.51 (***)	
	IV	3.54	205.36 (***)	
	V	0.68	214.25 (***)	

Note: (*): p-value < 0.10; (**): p-value < 0.05; (***): p-value < 0.01.

For all models, Breusch-Pagan Lagrange Multiplier showed a statistical significance of less than 1%, which attests to the need to observe the effects of individuals and time on panel regression. Hausman test did not show significance below 10% in any model, which implies that a panel of random effects is the most indicated for all cases. Thus, we used a regression of random effects for individuals and time for all four models and all three dependent variables. The results of these regressions are shown in Tables 5, 6, and 7.

Results in Table 5 consider ECC as the dependent variable. We can see that FAMPART_D is statistically significant in Models ECC-I and ECC-V (p-value < 0.01), but FAMPART is not statistically significant in Models ECC-II and ECC-IV (p-value > 0.10). This result implies that, while companies with family involvement in management are less engaged in environmental practices regarding climate changes, the degree of family involvement was not able to exert a significant influence. Complementarily, higher ownership concentration, regardless of the identity of the controlling shareholders, showed a significantly positive impact on such practices (p-value < 0.01).

Regarding the interaction variable in Model ECC-V (FAMPART_D \times OWNC), we can see that, even though companies with family involvement engage less in climate change practices, a higher ownership concentration tends to attenuate this effect. In other words, higher ownership concentration in family firms makes them engage more in climate change practices.

Table 5
Regression results for ECC as the dependent variable

	ECC-I	ECC-II	ECC-III	ECC-IV	ECC-V
Intercept	33.07 (***)	31.93 (***)	30.51 (***)	30.23 (***)	31.92 (***)
FAMPART_D	-1.05 (***)				-1.97 (***)
FAMPART		-0.03		-0.04	
OWNC			1.76 (***)	1.73 (***)	0.90 (***)
FAMPART_D × OWNC					1.59 (***)
SIZE	1.39 (***)	1.43 (***)	1.45 (***)	1.47 (***)	1.43 (***)
LEV	-0.01	-0.01	-0.01	-0.01	-0.01 (***)
ROA	0.49 (***)	0.63 (***)	0.55 (***)	0.60 (***)	0.51 (***)
Year Effects	Yes	Yes	Yes	Yes	Yes
Individual Effects	Yes	Yes	Yes	Yes	Yes
Adj-R ²	0.03	0.03	0.02	0.01	0.02
χ^2	1018.47 (***)	961.59 (***)	1028.21 (***)	376.78 (***)	1110.64 (***)
N obs	650	650	650	650	650

Note: (*): p-value < 0.10; (**): p-value < 0.05; (***): p-value < 0.01.

Results in Table 6 consider EPR as the dependent variable. Both FAMPART_D and FAMPART are statistically significant (p-value < 0.01), implying that companies with family involvement in management are less engaged in environmental reporting practices, and the degree of family involvement exerts a significantly negative influence. Complementarily, higher ownership concentration, regardless of the identity of the controlling shareholders, showed a significantly positive impact on such practices (p-value < 0.01).

Table 6
Regression results for EPR as the dependent variable

	EPR-I	EPR-II	EPR-III	EPR-IV	EPR-V
Intercept	39.31 (***)	37.24 (***)	34.56 (***)	35.56 (***)	40.39 (***)
FAMPART_D	-2.78 (***)				-6.90 (***)
FAMPART		-0.21 (***)		-0.20 (***)	
OWNC			2.00 (***)	2.08 (***)	-1.58 (***)
FAMPART_D × OWNC					7.42 (***)
SIZE	1.13 (***)	1.19 (***)	1.24 (***)	1.21 (***)	1.11 (***)
LEV	0.05 (***)	0.04 (***)	0.05 (***)	0.05 (***)	0.05 (***)
ROA	1.32 (***)	1.61 (***)	1.59 (***)	1.54 (***)	1.39 (***)
Year Effects	Yes	Yes	Yes	Yes	Yes

Individual Effects	Yes	Yes	Yes	Yes	Yes
Adj-R ²	0.03	0.02	0.03	0.02	0.04
χ^2	933.55 (***)	626.07 (***)	611.74 (***)	675.40 (***)	1166.41 (***)
N obs	650	650	650	650	650

Note: (*): p-value < 0.10; (**): p-value < 0.05; (***): p-value < 0.01.

Again, the interaction variable in Model EPR-V shows that, even though companies with family involvement engage less in environmental reporting practices, a higher ownership concentration tends to attenuate this effect.

Results in Table 7 consider RMA as the dependent variable. We can see that FAMPART_D is not statistically significant in Model ECC-I (p-value > 0.10), but FAMPART is statistically significant in Models ECC-II and ECC-IV (p-value < 0.01). This implies that companies with family involvement in management do not differ from other companies regarding their engagement in environmental resource management practices. However, the stronger the family involvement exerts a significantly negative influence. Complementarily, higher ownership concentration, regardless of the identity of the controlling shareholders, showed a significantly positive impact on such practices (p-value < 0.01).

Table 7
Regression results for RMA as the dependent variable

	RMA-I	RMA-II	RMA-III	RMA-IV	RMA-V
Intercept	55.81 (***)	56.95 (***)	52.41 (***)	53.68 (***)	53.13 (***)
FAMPART_D	-0.15				-1.19 (***)
FAMPART		-0.24 (***)		-0.24 (***)	
OWNC			3.76 (***)	3.77 (***)	2.83 (***)
FAMPART_D × OWNC					2.02 (***)
SIZE	0.03	0.00	0.10 (*)	0.05	0.09 (*)
LEV	0.13 (***)	0.14 (***)	0.14 (***)	0.14 (***)	0.14 (***)
ROA	-0.37 (***)	-0.45 (***)	-0.47 (***)	-0.55 (***)	-0.43 (***)
Year Effects	Yes	Yes	Yes	Yes	Yes
Individual Effects	Yes	Yes	Yes	Yes	Yes
Adj-R ²	0.00	0.01	0.01	0.01	0.01
χ^2	82.39 (***)	179.83 (***)	278.08 (***)	376.78 (***)	294.99 (***)
N obs	650	650	650	650	650

Note: (*): p-value < 0.10; (**): p-value < 0.05; (***): p-value < 0.01.

Once more, the interaction variable in Model RMA-V shows that, even though companies with family involvement engage less in environmental resource management practices, a higher ownership concentration tends to attenuate this effect.

In general, our results show that, for family presence, FAMPART has a negative effect on EPR and RMA (p-value < 0.01) and is not statistically significant for ECC (p-value > 0.10). As for FAMPART_D, we also observed a negative effect, but for ECC and EPR (p-value < 0.01), and no

significant effect for RMA (p-value > 0.10). These results lead to the rejection of Hypothesis 1 since family presence posits a negative effect, or no effect at all, on our environmental engagement proxies. Regarding ownership concentration, results show that the OWNC positively affects all three dependent variables (p-value < 0.01). This result also leads to rejecting Hypothesis 2, hence the positive effect of ownership concentration on our environmental engagement proxies.

As for the control variables, we observed that company size has a significant positive influence over ECC and EPR (p-value < 0.01) but no effect (or a weak positive effect) on RMA (p-value > 0.05). Return on assets showed a positive effect on ECC and EPR (p-value < 0.01), and a negative effect on RMA (p-value < 0.01). Leverage showed a positive influence on RMA (p-value < 0.01).

We highlight that all models were statistically significant (p-value of $\chi^2 < 0.01$) and had no multicollinearity problems (all VIFs for models were lower than 2, except for the interaction variable in model V, which posit a VIF of 6, but this is expected for such variables. We also highlight that all models showed adjusted-R² that were not greater than 4%. However, this is expected in panel data models controls for individuals and time effects.

5 Discussion

The research goes deeper into the relationship between governance characteristics (ownership structure/concentration), especially in family businesses, and engagement in environmental CSR practices. This is due to investigating the influence of family presence in TMT and controlling ownership, and the percentage of common shares of the controlling shareholders, on three proxies that reflect different aspects of environmental engagement.

Unlike what was expected, there was a negative and significant influence of the presence of family members on the three forms of environmental engagement practices used in this study. This result can be seen as evidence of what Kellermanns et al. (2012) argue when they state that SEW can negatively influence the company's proactive engagement with other stakeholders. According to the authors, in some cases, SEW can lead to selfish behavior by family members who put their needs above those of others. The act of appointing relatives to the board of directors and the executive board, which forms the proxy for family presence in this research, reveals behavior that can violate the rules of good governance and deprive non-family stakeholders (Kellermanns et al., 2012).

McGuire et al. (2012) also reported that family firms have poorer CSR performance than non-family firms. However, they observed that “large family firms may seek to limit weak social performance along dimensions relevant to (and visible to) a broader range of stakeholders” (McGuire et al. 2012, p. 1649). This may reflect their concern with community and employees’ dimensions of CSR, diminishing their environmental concerns.

This is supported by Tolmasquim et al. (2001), according to whom few large companies in emerging countries, including Brazil, use tools to measure environmental impact while defining their priority activities. Rochedo et al. (2018) show that, since 2012, after the ease of the Brazilian Forestal Code, there has been a reversal in the decreasing trend of deforestation in the Brazilian Amazon, and deforestation has stabilized at high rates in the Cerrado biome, which has already lost more than half of its original vegetation. Such evidence reveals that environmental externalities may have less relevance than other issues related to CSR. They may not be reflected in the SEW of Brazilian family companies or are only adopted by companies with a high shareholding concentration if the win-win relationship is evident.

As for ownership concentration of controlling shareholders, our results are in line with Crisóstomo and Freire (2015), that report a positive effect of ownership concentration on CSR practices. The authors believe that large controlling shareholders of Brazilian firms may see CSR as an effective way to improve the firm's reputation and its owners. Controlling shareholders with high ownership concentration tends to focus on the long-term, which is in line with adopting CSR practices.

6 Conclusion

We sought to identify the effect of family relationships and the ownership concentration on the environmental engagement of Brazilian companies. We argue that such engagement may develop differently in companies from emerging countries like Brazil than companies in developed countries. Among the factors that differentiate the economic environment in these two groups of nations is the importance of family wealth as financing and high ownership concentration.

Our results differ from what the mainstream literature points to for both evaluated aspects but are closer to more recent interpretations. We found that the family presence in Brazilian companies negatively influences environmental engagement. In contrast, firms with high ownership concentration positively affect such engagement.

It is also worth noting that the results point to the need to consider the context in which companies operate to explain the family presence and ownership concentration in engaging in CSR practices. This conclusion is in line with Naldi et al. (2013) regarding SEW, Lau et al. (2016), and Miniaoui et al. (2019), more comprehensively regarding ownership structure characteristics.

As a limitation of the research, it is evident that the proxies chosen to represent CSR engagement focus on environmental issues. Also, as the metric is based on scores calculated by a third party (CSRHub), the sample is limited to companies with data available for analysis. It should be noted that an increase in the companies that make up the sample over the period under investigation may impact the results.

For future research, we suggest using other dimensions of CSR, which concern issues related to the community and employees, for example. Such an examination, together with the analysis of the problems related to the environment, may shed more light on how family businesses with a high shareholding concentration in Brazil behave regarding the engagement of socially responsible practices.

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