ARTICLES

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UNETHICAL CULTURE AND COMPANY PERFORMANCE BASED ON EMPLOYEE REVIEWS

Cultura antiética e desempenho das empresas com base nas avaliações dos empregados

Cultura antiética y desempeño corporativo según las evaluaciones de los empleados

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ABSTRACT

I investigate the relationship between unethical culture and financial performance based on a text analysis of over 100,000 employee reviews posted at Glassdoor in Brazil. An original measure of unethical culture is created based on five ethical dimensions companies need to avert for an ethical culture to flourish. After creating an original list of around 1,400 terms, I find that companies scoring higher in unethical culture are less profitable and that this relationship is likely to be economically relevant. Of the five dimensions that make up an unethical culture, organizational unfairness, lack of awareness, and fear of retaliation are the three most strongly negatively related to performance. To my knowledge, this is the first paper to document a link between (un)ethical culture and corporate performance using online reviews. For investors, this paper contributes by showing that ethical culture measured by employee reviews is a value-relevant source of information.

Keywords: Ethical culture, organizational culture, intangible assets, online reviews, firm performance.

RESUMO

Este artigo estuda a relação entre cultura antiética e desempenho financeiro das empresas brasileiras com base em uma análise de texto de mais de 100 mil avaliações de empregados publicadas no website Glassdoor. Um indicador original de cultura antiética foi elaborado a partir de 1.400 termos relativos a cinco dimensões éticas. Como principal resultado, constatou-se que empresas com maior pontuação no indicador de cultura antiética são menos lucrativas e que essa relação é relevante economicamente. Das cinco dimensões que compõem uma cultura antiética, a injustiça organizacional, a falta de consciência e o medo de retaliação foram as três mais negativamente vinculadas ao desempenho. Este é o primeiro artigo a documentar a relação entre cultura (anti)ética e desempenho corporativo usando avaliações on-line. Para investidores, a pesquisa contribui ao indicar que a mensuração da cultura ética é uma informação relevante para o valor das empresas.

Palavras-chave: *Cultura ética, cultura organizacional, ativos intangíveis, análises on-line, desempenho da empresa.*

RESUMEN

Este artículo analiza la relación entre la cultura antiética y el desempeño financiero de las empresas brasileñas según un análisis de texto de más de 100 mil opiniones de empleados publicados en el sitio web Glassdoor. Se creó un indicador original de cultura antiética basado en 1.400 términos relacionados con cinco dimensiones éticas. Como resultado principal, se descubrió que las empresas con puntajes más altos en el indicador de cultura antiética son menos rentables y que esta relación es económicamente relevante. De las cinco dimensiones que conforman una cultura antiética, la injusticia organizacional, la falta de conciencia y el miedo a las represalias fueron las tres más negativamente vinculadas al desempeño. Este es el primer artículo que documenta la relación entre la cultura (anti)ética y el desempeño corporativo mediante evaluaciones en línea. Para los inversores, la investigación contribuye al demostrar que la medición de la cultura ética es una información relevante para el valor de las empresas.

Palabras clave: *Cultura ética, cultura organizacional, activos intangibles, análisis en línea, desempeño de la empresa.*

INTRODUCTION

Organizational culture can be understood as the set of norms and values that, if widely shared and strongly held throughout the firm, act as a social control system to shape employees' attitudes and behaviors (Chatman & O'Reilly, 2016; O'Reilly & Chatman, 1996). Culture is recognized by executives as an invisible but powerful force that can drive behavior for better or worse. In a survey with nearly 1,900 U.S. CEOs and CFOs, for instance, 92% believe that improving culture would increase firm value, and 79% place culture among the top five value drivers of their firms (Graham et al., 2016, 2017).

In recent years, the term "ethical culture" has been increasingly used. According to Treviño and Nelson (2017, p. 158), it can be thought of as a "slice" of the larger organizational culture that affects how employees think and act in ethics-related situations. They argue that ethical culture is created and maintained through a complex interplay of formal and informal organizational systems. While the former is represented by what is stated in documents and procedures, the informal system is revealed by the organization's social norms, role models, rituals, myths, and language.

The topic has gained more relevance since the 2008 global financial crisis and a subsequent series of high-profile corporate scandals (e.g., BP 2010, Olympus 2011, HSBC 2012, Barclays 2013, Odebrecht-Petrobras 2014, Volkswagen 2015, Wells Fargo 2016, Uber 2017, Facebook-Cambridge Analytica, 2018), many of which are believed to have been at least partially caused by poor ethical culture.

As a result, a literature has emerged, with recent studies finding that a stronger ethical culture is associated with various positive outcomes, such as lower observed unethical behavior (Kaptein, 2011a), increased likelihood of detecting and correcting wrongdoings in the workplace (Kaptein, 2011b), high-work engagement (Huhtala et al., 2011), reduced levels of corporate malfeasance (Webb, 2012), higher customer satisfaction (Moon & Choi, 2014), organizational innovativeness (Riivari & Lämsä, 2014), superior productivity and performance (Guiso et al., 2015; Leelhaphunt & Suntrayuth, 2020; Valentine et al., 2011), organizational citizenship behavior (Ruiz-Palomino & Martínez-Cañas, 2014), work motivation (Pavić et al., 2018), and lower sickness absence (Kangas et al., 2017).

These papers have three things in common: they were all carried out in developed countries, they focus on measuring the degree of ethical culture in companies (the good side of the story), and their measure of ethical culture was based on questionnaires sent to employees by researchers or by the companies themselves, in this case usually in an effort to be featured in lists such as the Great Place to Work certification.

This paper aims to contribute to this literature in three different ways. First, it is based on a sample from a large emerging country. Second, it focuses on the bad side of the story by measuring the degree of unethical culture in companies. And third, my measure of unethical culture is based on thousands of reviews anonymously posted by current and former employees on a company-ratings website. Specifically, I investigate the effect of unethical culture on financial

performance based on an extensive dataset of 100,809 online reviews of Brazil's 1,000 largest listed and unlisted firms from 2014 to 2018. The reviews were posted at the local subsidiary of US-based Glassdoor.

I find two main results. The first is that companies scoring higher in my unethical culture indicator are, on average, less profitable. This result holds after controlling for firm characteristics, industry, and time fixed-effects in System-GMM regressions using return on equity (ROE), return on assets (ROA), and net profit margin as alternative measures of financial performance.

Specifically, the coefficients of the unethical culture variable are negative and statistically significant for all financial performance metrics in all models, including the more robust System-GMM regressions. The magnitude of the coefficients also suggests that the link between unethical culture and performance is likely to be economically relevant. In the case of ROE, for instance, the coefficient of the unethical culture variable is -0.044 for the dynamic OLS regression (significant at the 1% level). This suggests that, *ceteris paribus*, a company would increase its ROE by 2.5% per year if it moved from the 90th percentile in terms of unethical culture score to the 10th percentile. Alternatively, it implies that a one-standard-deviation decrease in unethical culture is associated with an increase in annual ROE by 0.97%.

The second main result comes from the regressions using the five dimensions of unethical culture as explanatory variables: "organizational unfairness," "abusive managerial behavior," "selfish orientation," "lack of awareness," and "fear of retaliation." In this case, the negative relation with performance is most evident for the dimensions on organizational unfairness, lack of awareness, and fear of retaliation. In the case of lack of awareness, for instance, its coefficients are significantly negative in two out of the three GMM-models for both ROE and ROA. However, because the results for the five unethical culture dimensions were not consistent in all regression models with alternative profitability indicators, it was not possible to conclude that these unethical dimensions lead to poor corporate performance on an individual basis.

To my knowledge, this is the first paper to document a negative link between unethical culture and financial performance using text analysis of employees' online reviews. This conclusion reinforces the idea that ethics pays off and that investing in a sound culture is good business not only in developed countries, where most empirical research on this topic has been carried out, but also in emerging economies. It is also interesting to note that the 2014-2018 sample period was a particularly turbulent time for the Brazilian economy. In 2014, prosecutors launched a huge investigation called Operation Car Wash, which led to the arrest of over 200 executives involved in kickbacks in public-work contracts. For many, this is considered the largest corporate corruption scandal in history. In parallel, and partially due to this operation, Brazil suffered the greatest recession in its nearly 200-years history, with a two-year GDP contraction of around 8% in 2015-2016. Thus, my results suggest that investing in the creation of an ethical culture may be a particularly relevant source of competitive advantage for companies in times of widespread corporate corruption and economic distress.

The second main contribution of this paper concerns the creation of an original measure of unethical culture. My indicator is based on Ethical Systems' "Two-Factor Model of Ethical Culture" described by Bulgarella (2018). Ethical Systems is a collaboration of top researchers on business ethics. Its model is the outcome of a project carried out by a research group validated with 1,358 respondents. The workgroup identified five key areas that promote ethical behavior in companies. Each is divided into two dimensions – the qualifiers and disqualifiers – that clarify what companies should and should not do to create a healthy environment.

Given my goal in this paper, I focused on Ethical Systems' five disqualifiers to create my original measure of unethical culture: organizational unfairness, abusive managerial behavior, selfish orientation, lack of awareness, and fear of retaliation. For each of them, which corresponds to an unethical culture dimension, I created a specific list of words or terms used in the text analysis of employee reviews (altogether, I analyzed around 1,400 words or terms). Future research, therefore, can use this paper as a starting point for the conversion of employee reviews into objective indicators of unethical culture and its key dimensions.

For institutional investors, particularly those interested in ESG (Environmental, Social, and Corporate Governance) issues, this paper further contributes by showing that (un)ethical culture measured by employee reviews is likely to be a value-relevant source of information to be used in investment and divestment decisions.

This paper is organized as follows. In the second section, I review the empirical literature on ethical culture. In the third section, I describe the sample, data sources, and research model, as well as the operational definition of the variables. I present and discuss the results in the fourth section, with robustness tests being described in the fifth section. The sixth section, in turn, concludes.

LITERATURE REVIEW

From a broader perspective, this paper fits into the literature linking organizational culture to corporate performance and effectiveness. According to Chatman and O'Reilly (2016), organizational culture are "the norms that characterize a group or organization that, if widely shared and strongly held, act as a social control system to shape members' attitudes and behaviors." It comprises, therefore, the behavioral patterns shared by members of an organization primarily transmitted through social interaction and manifested in its daily operations and relationships with stakeholders.

Executives recognize culture as an invisible but powerful force that drives people's behavior for better or worse. In two related papers, Graham et al. (2016, 2017) surveyed nearly 1,900 CEOs and CFOs of 1,348 U.S. firms. More than 90% of them said that culture is important or very important, while 92% believe that improving culture would increase firm value. Moreover, 85% believe that a poor culture increases the chance of an employee acting illegally, while only 16% reported that their firm's culture is exactly where it should be. Executives also link culture to ethical choices (compliance, short-termism), innovation (creativity, taking appropriate risks),

and value creation (productivity, acquisition premia). In addition, Chapple et al. (2020, p. 86) argue that corporate governance and control mechanisms within a firm are powerless to uncover financial fraud if the firm's culture allows or tolerates it.

There is a vast literature on organizational culture, including its links with firm performance and effectiveness – a broad topic encompassing elements beyond the scope of this paper. In this vein, Chatman and O'Reilly (2016) and Warrick (2017) offer comprehensive literature reviews. For the purposes of this study, I detail the research most closely related to my methodology based on employee reviews.

Grennan (2013) pioneered studies on organizational culture using career community websites. After constructing indicators based on employee reviews at Glassdoor, she concludes that corporate culture is an important channel through which shareholder governance affects firm value. Specifically, she shows that stronger shareholder governance changes aspects of culture, leading to greater results-orientation and less integrity, collaboration, and customer-focus. Therefore, managers focus on easy-to-observe benchmarks that allow shareholders to realize quick gains. Over time, this change in culture leads managers to overlook harder-to-measure intangibles. Overall, she finds that firm value declines 1.4% through this corporate culture channel.

Another study using a measure of corporate culture from a large-scale social media came from Moniz (2017). He employed a computational linguistics technique to infer employees' perceptions from 417,645 reviews for 2,237 U.S. companies at Glassdoor. He proxies performance-orientated firms by assessing the extent to which employees discuss keywords such as 'goals' and 'targets' and semantically related terms in their texts. He finds a significant positive link between performance-orientated firms and future earnings surprises.

A third study observed was carried out by Ji et al. (2017). They analyzed Glassdoor's 1,112,476 employee ratings of 14,282 public firms over the 2008-2015 period to investigate whether financial reporting risk is associated with company culture. They find that firms with lower levels of "culture and values" scores are more likely to be subjected to SEC fraud enforcement actions and securities class action lawsuits. They also notice that a lower rated culture is associated with an increased likelihood of narrowly meeting market earnings expectations, a proxy of financial reporting risk.

This paper also fits into the literature on the consequences of investing in building an "ethical culture." According to Treviño and Nelson (2017, p. 158), the ethical culture of an organization can be thought as a "slice" of the larger organizational culture that affects the way employees think and act in ethics-related situations. The two main operationalizations of ethical culture were developed by Treviño et al. (1998) and Kaptein (2008). Treviño et al. (1998) created a 14-item unidimensional binary questionnaire, while Kaptein (2008) created a more detailed instrument measured through a 72-item questionnaire.

Several studies have been done using these self-reported questionnaires to assess ethical culture. These studies have found that ethical culture is associated with positive outcomes for organizations, such as: activation of moral imagination (Moberg & Caldwell, 2007), lower observed unethical behavior (Kaptein, 2011a), increased likelihood of detecting and correcting

wrongdoings in the workplace (Kaptein, 2011b), high-work engagement (Huhtala et al., 2011), reduced levels of corporate malfeasance (Webb, 2012), higher customer satisfaction (Moon & Choi, 2014), organizational innovativeness (Riivari & Lamsa, 2014), organizational citizenship behavior (Ruiz-Palomino & Martínez-Cañas, 2014), work motivation (Pavić et al., 2018), employee retention (Makridis, 2018), and lower sickness absence (Kangas et al., 2017). It is important to note that most of this research relies on the same individuals simultaneously rating the ethical culture of their companies and their own job attitudes. This research design may lead to response contamination and does not allow for causal conclusions.

In the specific case of connecting ethical culture with financial performance, Guiso et al. (2015) analyzed data from 1,000 American companies between 2007 and 2011 that are part of the "Best Places to Work" list. About 400,000 employees evaluated their own companies through 58 statements related to different aspects of their workplace. Their key conclusion was that the level of employee agreement with two statements related to a culture of integrity proved to be strong predictors of corporate performance in terms of higher productivity, profitability, better industrial relations, and even higher level of attractiveness to prospective job applicants.

Based on the results of the empirical literature indicating that a stronger ethical culture is associated with various positive outcomes and on a conceptual argument that corporate governance problems are at least partially caused by poor ethical culture, I posit my research hypothesis:

> H: A higher unethical culture is associated with a negative outcome in terms of company performance.

METHODOLOGY

Sample and data sources

The sample was gathered from two databases. The first is the Valor 1,000 ranking published annually by Valor Economico, Brazil's leading business newspaper. This list identifies the 1,000 largest Brazilian companies by revenue, both listed and unlisted. It also provides some corporate and financial data for these firms. As most of Brazil's largest companies are unlisted, this database did not offer stock market indicators. My analysis considered the period from 2014 to 2018, i.e., a database of 5,000 firm-year observations from 1,894 different firms.

The second database was Brazil's subsidiary of US-based Glassdoor, the world's largest career community website. As described in the previous section, Glassdoor database has been recently used by papers in the field of corporate culture, such as Grennan (2013), Moniz (2017), and Ji et al. (2017).

Glassdoor asks employees to anonymously comment on the pros and cons of the companies they work or worked for. The website also asks them to rate their firms on a 1 to 5 scale on five dimensions: culture, compensation & benefits, career opportunities, work/life balance, and overall satisfaction.

All employee reviews are publicly available on Glassdoor for registered users and were accessed. However, the managers of the Brazilian subsidiary did not grant me access to the full Glassdoor database. Therefore, an algorithm was created to automate data extraction from the website.

I retrieved all 307,010 employee reviews posted on the website from 2014 to 2018 for 5,813 firms. About two-thirds (67.8%) of the reviews were posted by current employees, while former employees posted around one-third (32.2%).

By merging Valor 1,000 and Brazil's Glassdoor databases using a threshold of at least 15 reviews per firm-year, I ended up with a final sample of 1,685 firm-year observations for 670 different firms based on the reviews of 100,809 employees. Each firm received an average of 150.5 employee reviews over this period (59.8 reviews per firm-year on average), as detailed in Table 1.

Table 1. Sample breakdown by year

Year	Number of firms	Number of reviews	Average n reviews/company
2014	206	11,768	57.1
2015	417	33,907	81.3
2016	312	15,137	48.5
2017	337	16,627	49.3
2018	413	23,370	56.6
SUM	***1,685***	***100,809***	***59.8***

Source: Elaborated by the author.

OPERATIONAL DEFINITION OF THE MAIN VARIABLES

Explanatory variables on unethical culture

My measure of unethical culture is based on Ethical Systems' "Two-Factor Model of Ethical Culture" described by Bulgarella (2018). Ethical Systems is a collaboration of top researchers on behavioral business ethics with a mission to bridge research between leaders in academia and

the corporate world. The two-factor model of ethical culture is the outcome of a project carried out by a team of Ethical Systems' researchers.

They aimed to identify the main elements that make up an ethical culture in a valid and reliable way. After carrying out a two-phase work involving the review of literature on ethical culture, creation of new measures, and empirical validation through a pilot testing with 1,358 respondents, the workgroup identified five key areas to promote ethical behavior in companies: social contract, leadership behavior, organizational ethos, individual perceptiveness, and response to misconduct.

Each area is divided into two dimensions that clarify the do's and don'ts companies must address to create a sound ethical culture. These are the so-called qualifiers and disqualifiers. The disqualifiers are the practices and dynamics companies need to avert so they can allow an ethical culture to flourish. They are organizational unfairness, abusive managerial behavior, selfish orientation, lack of awareness, and fear of retaliation. The qualifiers, in turn, specify what companies need to do in order to foster a strong ethical orientation.

As my goal in this research is to assess unethical culture in companies, I focus on Ethical Systems' five disqualifiers to create my construct. In Table 2, I present a definition of each unethical culture dimension and the corresponding set of terms associated with them.

Table 2. Dimensions of an unethical culture

#	Disqualifier	Definition	Examples of words or terms associated with each dimension employed in the text analysis
1	**Organizational Unfairness**	Being treated unfairly by the organization is likely to foster unethical behavior as a result of a sense of resentment and injustice stemming from the employee's perception of how the organization distributes its resources, outcomes, as well as implements its processes and policies.	• Work environment / work climate / work culture that is difficult / bad / unprofessional / unhealthy; • Presence of cliques / favoritism / nepotism; • Absence of meritocracy / dependence on friendship / lack of professionalism; • Privilege relatives / appointment of relatives; • Politicking / prevalence of politics / need to flatter / lots of gossip; • Lack of recognition / Low recognition of the employee / worker; • Do not feel valued; • Lack of respect / disrespect / do not respect the people / employees; • There is no trust in the organization / low level of trust / mistrust / distrust.
2	**Abusive Managerial Behavior**	Abusive managerial behavior can be described as extreme behaviors that can result in a subordinate or work group being plagued by uncertainty, anxiety, and fear. They include arbitrary decisions, diminishing or humiliating subordinates, intolerance with divergent views, shouting at people, use of derogatory terms, etc.	• Managers / bosses / superiors / leaders who: abuse; are aggressive / narcissistic / Machiavellian / psychopaths / cruel / despotic / tyrannical; are dishonest / egocentric / with an inflated ego / emotionally or psychologically unstable / unbalanced / immoral / unethical / inhumane / intolerant / offensive / toxic; • Abuse of power; • Sexual or moral harassment / bad jokes / disrespectful jokes; • Create emotional distress / stress; • Lack humanity / humanization / absence of a human management; • Management is apathetic / arbitrary / distant / absent / difficult to access / inaccessible; • Leadership based on fear / fear-based philosophy / management based on conflict.

Continue

Table 2. Dimensions of an unethical culture

Concludes

#	Disqualifier	Definition	Examples of words or terms associated with each dimension employed in the text analysis
3	**Selfish Orientation**	Selfish orientation means putting self-interest always ahead of the collective good. In a culture with such sense of direction, people tend to become more defensive, individualistic and primarily concerned with the protection of their ranks and personal outcomes. This is likely to increase the likelihood of unethical behaviors.	• Silo mindset / mentality; • Presence of fiefdoms / tribes; • Existence of strong rivalry / quarrels / competition between areas / teams / departments; • Highly competitive place / high internal competition / competitiveness among people; • Atmosphere of war / disputes; • Culture of internal competition / war; • People / employees / teams are aggressive with each other; egocentric / have inflated egos; are unfriendly; excessively competitive; selfish; cheat on others; conspire against others; promote intrigues; are individualistic.
4	**Lack of Awareness**	Moral awareness is the ability of an individual to recognize that his/her potential decision or action could affect the interests, welfare, or expectations of the self or others. If employees are not able to perceive the ethical nature of the situations they face, then the organization will have much more difficulty in developing a strong ethical orientation.	• Company only thinks / only aims / is solely focused / is focused only on profits / financial results / numbers / money; • A place where the end justifies the means / reaching the numbers is all that matters / reaching the results regardless of the means; • Workload is exhaustive / exaggerated / absurd / extreme; • Need to hit the numbers at any cost / at any price / frantically search for the results; • People are emotionally disturbed / sick / depressed / anxious / overwhelmed / ill; • Code of ethics / conduct does not work / is not practiced / is not implemented / is not followed; • Culture is only in the rhetoric / discourse / it is not applied / is not followed / is not adopted; • Does not follow rules / its own policies / its own culture.
5	**Fear of Retaliation**	Retaliation occurs when an employer takes adverse action against an employee for opposing an unlawful or illegal practice. Fear of retaliation, in turn, means creating an environment in which people sense they will suffer negative consequences if they report behavior problems or unethical behaviors. When fear of retaliation is present, employees are less likely to question others' behaviors.	• Fear of speaking out / fear of reprisal / fear of retaliation / fear of being fired / afraid of being dismissed; • It is a high tension / very tense environment; • There is a high degree of terrorism in the working environment; • Management is based on threats / threatening management; • There is a climate of fear / terror / intimidation; • You cannot open your mouth / no one speaks out / you have to be silent; • You cannot confront / disagree / diverge; • Everybody is afraid of exposing their points of view / you must be careful about what is said; • Whistleblowing / ethics channel does not work / it is only on paper.

Source: Elaborated by the author.

Based on the list of words and terms associated with each dimension of an ethical culture, I then carry out a text analysis in order to identify their presence in the field "pros" of online employee reviews. I employ a method based on the probability a word or term associated with each ethical culture dimension is mentioned. Specifically, a score of "1" is assigned for each

employee review containing at least one word or term related to the ethical dimension at hand, and "0" otherwise. For each ethical culture dimension referring to a certain organization, therefore, this indicator is calculated by the sum of the scores divided by the number of reviews. Subsequently, the ethical culture score of each company is calculated by the sum of the scores of the five ethical dimensions. The advantage of this method is that it avoids assigning excessive weight to reviews that may contain a high number of words or terms associated with a certain dimension that comprises the ethical culture indicator.

Dependent variables on corporate performance

Corporate performance can be defined in many ways. In this study, I use three alternative measures for robustness purposes: return on assets (ROA), i.e., operating income divided by total assets; return on equity (ROE), i.e., net income divided by shareholders' equity; and net profit margin (NET PROFIT MARGIN), i.e., net income divided by net revenues.

Control variables

The Valor 1,000 ranking is composed of a majority of unlisted and closely held firms. As a result, public information about these companies is scarce, and it is not possible to use an ideal set of controls. In any case, I carried out my best efforts to control for the following attributes that might influence the main variables of interest: firm size (SIZE) – total assets; financial leverage (DEBT_LEV) – short-term plus long-term debt divided by total assets; country source of the company's capital (COUNTRY) – dummy variable with "1" for firms with Brazilian capital, and "0" otherwise; location of the company's headquarters (SOUTHEAST_ REGION) – dummy variable with "1" if the firm's headquarters is located in Brazil's Southeast region, and "0" otherwise; industry controls – 27 industry dummy variables based on the Valor 1,000 classification; and, time controls – yearly dummies from 2014 to 2018. All variable definitions are provided in Table 3. To reduce the influence of extreme values, I winsorized continuous variables at the 1st and 99th percentiles.

Table 3. Research variables and operational definitions

Variable	Type	Acronym	Operational definition	Firm-year observations
Return on assets	Dependent	ROA	Operating income/total assets.	1,467
Return on equity		ROE	Net income/shareholders' equity.	1,467
Net profit margin		PROFIT_ MARGIN	Net income/net revenues.	1,505

Continue

Table 3. Research variables and operational definitions

Concludes

Variable	Type	Acronym	Operational definition	Firm-year observations
Unethical culture	Explanatory	UNETHICAL_ CULTURE_P	Sum of the probability of occurrence of a word or term associated with the five unethical culture dimensions	1,685
Organizational unfairness		ORG_INJUSTICE_P		
Abusive managerial behavior		ABUSIVE_MANAG_P		
Selfish orientation		SELFISH_ORIENT_P		
Lack of awareness		LACK_AWAREN_P		
Fear of retaliation		FEAR_RETALIAT_P		
Firm size	Control	SIZE	Natural logarithm of total assets.	5,599
Financial leverage		DEBT_LEV	Gross debt (short-term debt and current portion of long-term debt + long-term debt)/total assets.	5,599
Country source of the company's capital		COUNTRY	"1" for with Brazilian capital; "0", otherwise.	6,000
Region of the company's headquarters		SOUTHEAST_ REGION	"1" if the firm's headquarters is located in Brazil's Southeast region (the most developed, accounting for about 60% of Brazil's GDP); "0", otherwise.	6,000
Industry		IND_ DUMMIES	Twenty-seven industry dummy variables using the Valor 1,000 newspaper classification.	6,000
Time		YEAR_ DUMMIES	$YEAR(t) = 1$ in the t-th year and otherwise, with $t = 1,...,5$ (2014,..., 2018).	6,000

Source: Elaborated by the author.

Research model and data analysis

The baseline model to analyze the influence of an unethical culture on corporate performance is given by the following linear specification:

$$Desempenho_{it} = \alpha + \beta_1 \times Cultura\_\bar{A}ntiética_{it} + \beta_2 \times Desempenho_{it-1} + \sum_{j=3}^{n} \beta_j \times VC_{jit} + \sum_{k=1}^{n} \delta_k \times IND_{ki} + \sum_{l=1}^{n} \gamma_l \times ANO_{li} + n_i + u_{it}$$

Where:

$Performance_{it}$ = measure of performance of the i^{th} firm at time *t*. Alternative indicators: return on assets, return on equity, or net profit margin;

= average unethical culture score of the *ith* firm at time *t*.

Performanceit-1 = measure of performance of the *ith* firm at time *t-1*;

CV_{ji} = set of control variables with firm-specific characteristics of the *ith* firm at time *t*: firm size, financial leverage, country source of the company's capital, and geographical location of the firm's headquarters;

IND_{ki} = set of industry dummy variables to control for industry heterogeneity;

$YEAR_{mi}$ = set of year dummy variables to control for the heterogeneity across time;

n_i = firm specific and time-invariant effect of the *ith* firm (non-observable fixed effect); and,

u_{it} = random error term of the *ith* firm at time *t*.

The baseline model raises several endogeneity concerns which I endeavor the best efforts to address. Firstly, poor financial performance may lead employees to deliberately or unconsciously make more negative comments about their firms, leading to a higher unethical culture score. In addition, companies with financial difficulties could be more susceptible to being seen as with unethical culture as they would have greater difficulty in honoring their financial commitments, potentially influencing the perception of their employees (the author thanks the anonymous reviewer for raising this possibility). Thus, reverse causality may take place. In addition, the database is mostly composed of closely held firms. This leads to relevant data limitations on firm-level attributes that are usually important for research in this field. Thus, omitted variables affecting the coefficients of both variables of interest may also occur.

I try to mitigate these endogeneity concerns through alternative operational definitions for financial performance and unethical culture, as well as by estimating the relationship between the main variables of interest using four different econometric approaches in increasing order of complexity: pooled OLS regressions, dynamic OLS regressions (controlling for past performance), fixed-effects models, and System-GMM (generalized method of moments). Among these, dynamic GMM regressions constitute the most reliable procedure employed in my analysis to mitigate endogeneity concerns.

In all regressions, I test for the significance of the coefficients using standard errors robust to heteroskedasticity clustered by firm. I also restrict the analysis to companies with a minimum of 15 employee reviews per year to reduce potential biases in the unethical culture indicators. Despite these efforts to mitigate endogeneity concerns, there may still be certain endogeneity issues that have not been properly addressed. Thus, it is not possible to rule out that some results may be driven by spurious correlation or claim causality.

RESULTS

Descriptive and quartile analysis

Table 4 provides descriptive statistics of research variables. In terms of performance, the median firm-year observation of the sample exhibits a ROE of 11.4%, ROA of 6.1%, and a net profit margin of 3.3%. The frequency of words or terms associated with an unethical culture on employee reviews has a mean value of 71.1%, with the company at the 25th(75th) percentile exhibiting a value of 55% (86%). The frequency of words or terms associated with each one of the dimensions that comprise an unethical culture varies significantly, ranging from 5.3% for the dimension of selfish orientation to 38.9% for the dimension of organizational unfairness.

Companies from the sample exhibit median (mean) total assets of BRL 2,435 million (BRL 11.646 billion), around USD 610 million (USD 2.9 billion). Around 67% of the companies are financed by Brazilian equity capital, while the remaining are controlled by foreigners. Around 74% of the companies are based in the richest Southeast region, while the rest is based in the other four regions of the country.

Table 4. Descriptive statistics of research variables

Variable	Acronym	Obs.	Mean	Standard Deviation	Min	Median	Max
Return on Equity	ROE	1,467	11.5%	31.1%	-58.3%	8.4%	92.9%
Return on Assets	ROA	1,467	6.1%	8.9%	-10.6%	5.3%	27.6%

Continue

Table 4. Descriptive statistics of research variables

Concludes

Variable	Acronym	Obs.	Mean	Standard Deviation	Min	Median	Max
Net Profit Margin	PROFIT_MARGIN	1,519	3.3%	10.2%	-22.9%	3.1%	23.0%
Unethical Culture	UNETHICAL_ CULTURE_P	1,685	71.1%	22.8%	0%	70%	180%
Organizational Unfairness	ORG_UNFAIR_ P	1,685	38.9%	13.8%	0%	37.7%	92%
Abusive Man. Behavior	ABUSIVE_MANAG_ P	1,685	9.1%	6.6%	0%	8.3%	45.4%
Selfish Orientation	SELFISH_ORIENT_ P	1,685	5.3%	4.8%	0%	4.7%	33.3%
Lack of Awareness	LACK_AWAREN_ P	1,685	11.0%	7.9%	0%	10%	56.5%
Fear of Retaliation	FEAR_RETALIAT_ P	1,685	6.8%	5.8%	0%	5.9%	35.7%
Firm Size (Total Assets in BRL Million)	SIZE	1,510	11,646	52,331	48.4	2,435	900,135
Financial leverage (Gross debt/assets)	DEBT_LEV	1,510	0.17	0.27	0.01	0.05	0.99
Source of the capital (Brazil = 1)	COUNTRY	1,685	0.67	0.47	0	1	1
Headquarters region (Southeast=1)	REGION	1,685	0.74	0.44	0	1	1

Source: Elaborated by the author.

This initial inspection of the data concludes with correlations and quartile analysis. Correlations are presented in three matrices. The first shows the correlations among the five dimensions that make up an unethical culture.

Table 5. Correlation matrix: Unethical culture dimensions

	UNETHICAL_ CULTURE_P	ORG_ UNFAIR_P	ABUSIVE_ MANAG_ P	SELFISH_ ORIENT_ P	LACK_ AWARENESS_ P	FEAR_ RETALIAT_P
UNETHICAL_CULTURE_P	1					
ORG_ UNFAIR_P	**0.7413*****	**1**				
ABUSIVE_MANAG_P	**0.5231*****	**0.1216*****	1			
SELFISH_ ORIENT_P	**0.4629*****	**0.1696*****	**0.1288*****	1		
LACK_ AWARENESS_P	**0.4969*****	0.0279	**0.2560*****	**0.1699*****	1	
FEAR_ RETALIAT_P	**0.5034*****	**0.2138*****	**0.1643*****	**0.2067*****	**0.0843*****	1

Note: The table exhibits Pearson correlation coefficients. Table 3 details the operational definitions of the variables. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

Source: Elaborated by the author.

Table 5 shows that the five dimensions comprising my indicator of unethical culture exhibit a positive correlation among themselves, significant at the 1% level. The only exception comes from the correlation between the dimensions of organizational unfairness and lack of awareness, which has a non-significant coefficient. The next table shows the correlations between unethical culture and corporate performance.

Table 6. Correlation matrix: Unethical culture and corporate performance

	UNETHICAL_ CULTURE_P	ORG_ UNFAIR_P	ABUSIVE_ MANAG_P	SELFISH_ ORIENT_P	LACK_ AWARENESS_P	FEAR_ RETALIAT_P
ROA	**-0.098*****	**-0.112*****	0.089	**-0.051***	0.030	**-0.106*****
ROE	**-0.095*****	**-0.079*****	**-0.044***	-0.028	-0.020	**-0.075*****
PROFIT MARGIN	**-0.080*****	**-0.058****	-0.020	**-0.050***	0.013	**-0.128*****

Note: The table exhibits Pearson correlation coefficients. Table 3 details the operational definitions of the variables. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

Source: Elaborated by the author.

As shown in Table 6, there is a significant negative correlation at the 1% level between the probability that a word or term associated with unethical culture is mentioned in employee reviews and the three alternative measures of performance: ROA, ROE, and net profit margin. Two of the five dimensions comprising an unethical culture exhibit strong negative correlations with performance: organizational unfairness and fear of retaliation. For both, there is a negative correlation at the 1% level with all measures of firm performance. On the other hand, the dimension of lack of awareness did not exhibit a significant correlation with performance, while the two other dimensions of abusive managerial behavior and selfish orientation exhibited a negative correlation with some but not all performance variables.

Regression analysis

Table 7 reports the results of different regression models aiming to analyze the effect of unethical culture on financial performance. The dependent variables are ROA (models 1-4), ROE (models 5-8), and net profit margin (models 9-12). The explanatory variable of interest is "unethical culture," the sum of the probability of occurrence of a word or term associated with the five unethical culture dimensions in employee reviews. Other independent variables are used as controls. As described in the previous section, I estimate the relationship between the main variables of interest through four econometric approaches in increasing order of complexity. Models 1, 5, and 9 report estimates from OLS regressions with robust White-corrected standard errors. Models 2, 6, and 10 report estimates from dynamic OLS regressions with lagged performance variables. Models 3, 7, and 11 show estimates from fixed effects regressions. Models 4, 8, and 11 are dynamic panel data models estimated through System-GMM regressions. In the GMM regressions, I use variables lagged two to four years as instruments for the endogenous variables and assume that all explanatory variables except geographic location, country source of the company's capital, industry, and year dummies are endogenous.

Table 7. The effect of an unethical culture on financial performance

Dependent Variable	ROA				ROE				NET PROFIT MARGIN			
Method	OLS	Dynamic OLS	Fixed-Effects	GMM-SYS	OLS	Dynamic OLS	Fixed-Effects	GMM-SYS	OLS	Dynamic OLS	Fixed-Effects	GMM-SYS
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
UNETHICAL_CULTURE_P	**-0.044*** (-3.44)**	**-0.046*** (-2.57)**	**-0.027* (-1.69)**	**-0.053* (-1.89)**	**-0.170*** (-4.18)**	**-0.158*** (-2.67)**	**-0.162*** (-2.93)**	**-0.197* (-1.95)**	**-0.046*** (-3.16)**	**-0.061*** (-3.09)**	**-0.035* (-1.90)**	**-0.066** (-2.28)**
FIRM SIZE	-0.005*** (-2.67)	-0.001 (-0.11)	-0.033*** (-4.70)	-0.023*** (-2.91)	-0.009 (-1.29)	0.007 (0.68)	-0.086*** (-3.26)	-0.046 (-1.49)	-0.004 (-1.59)	0.001 (0.51)	-0.009 (-1.05)	0.005 (0.61)
FINANCIAL_LEVERAGE	-0.009 (-0.62)	0.031 (1.56)	0.021 (1.07)	0.024 (0.70)	0.041 (0.66)	0.198** (2.20)	-0.064 (-0.56)	-0.012 (-0.08)	-0.044*** (-3.26)	0.007 (0.38)	0.009 (0.40)	0.029 (0.83)
BRAZILIAN CAPITAL	-0.007 (-1.29)	-0.006 (-0.86)	-0.021** (2.01)	-0.017 (-1.54)	0.028 (1.38)	0.022 (0.85)	-0.028 (0.80)	-0.013 (-0.39)	0.007 (1.15)	0.008 (0.88)	0.003 (0.22)	0.006 (0.46)
SOUTHEAST REGION	-0.004 (-0.70)	-0.002 (-0.32)	-0.007 (-0.68)	-0.001 (-0.05)	-0.015 (-0.77)	-0.006 (-0.24)	-0.022 (-0.62)	-0.009 (-0.24)	-0.005 (-0.74)	-0.001 (-0.10)	0.001 (0.08)	0.001 (0.04)
LAGGED_PERFORMANCE (ROAt-1, ROAt-1, PROFIT_MGt-1)		**0.238*** (5.16)**		-0.035 (0.50)		**0.182*** (3.31)**		0.062 (0.76)				0.009 (0.12)
INDUSTRY DUMMIES	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES	NO	YES
YEAR DUMMIES	YES											
Constant	**0.165*** (7.37)**	**0.092*** (2.96)**	**0.363*** (6.27)**		**0.268*** (3.51)**	**0.042** (0.41)	**0.934*** (4.27)**		**0.113** (4.80)**	**0.300*** (6.56)**	**0.134** (1.99)**	
Number of observations	1,326	719	1,443	719	1,329	723	1,445	723	1,335	740	1,454	740
Number of groups			605	313			605	314			607	321
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Adjusted R-squared	0.086	0.082	0.016		0.047	0.102	0.015		0.081	0.096	0.010	
AR(1) test p-value				0.000				0.000				0.000
AR(2) test p-value				0.535				0.185				0.841
Hansen test p-value				0.169				0.376				0.086
Diff-in-Hansen tests p-value				0.102				0.327				0.371

Note: This table exhibits the outcomes of different regression models aiming at analyzing the effect of an unethical culture on corporate performance. The dependent variables are ROA (models 1-4), ROE (models 5-8), and NET PROFIT MARGIN (models 9-12). The explanatory variable of interest is UNETHICAL_CULTURE_P, the sum of the probability of occurrence of a word or term associated with the five unethical culture dimensions on online employee reviews at glassdoor.com.br. Table 3 details the control variables Models 1, 5, and 9 report estimates from OLS regressions with robust White-corrected standard errors. Models 2, 6, and 10 report estimates from dynamic OLS regressions with lagged performance variables. Models 3, 7, and 11 show estimates from Fixed Effects regressions. Models 4, 8, and 11 are estimated through System-GMM regressions. Robust t-statistics are in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

Source: Elaborated by the author.

The results for pooled OLS, dynamic OLS, and fixed-effects models show that the unethical culture indicator is negatively associated with all measures of corporate financial performance: ROE, ROA, and net profit margin. The first column shows, for instance, that the coefficient of unethical culture on ROE is -0.044 and significant at the 1% level. This suggests that, *ceteris paribus*, a company moving from the 10th percentile in terms of unethical culture (score = 42.3%) to the 90th percentile (score = 100.0%) would be associated with a decrease in ROE by 2.5% per year. If the company's ROE is equal to the sample's mean of 11.4%, then a decrease of about 22.8% in its ROE is expected. Alternatively, the coefficient suggests that a one-standard-deviation increase in unethical culture is associated with a decrease in annual ROE by 0.97%.

The more important results, though, come from the more robust System-GMM regressions. Here, the coefficients for unethical culture remain negative and significant for all financial performance variables. In the case of ROE, for example, the Hansen test has a p-value of 0.376, while the difference-in-Hansen test p-value is 0.327. These tests suggest that it is not possible to reject the null hypothesis that the lagged instruments are valid. The coefficient of unethical culture for ROE is also large (0.197, about four times the size of the OLS coefficient), corroborating the idea of a relevant economic impact for this performance indicator.

I also run regressions using the five dimensions of unethical culture as explanatory variables of interest to investigate their effect on firm performance (omitted for space reasons and available upon request). In this case, the dimensions of organizational injustice, lack of awareness, and fear of retaliation were the most negatively associated with financial performance. For lack of awareness, its coefficients were significantly negative in two out of the three GMM-models (for ROA and ROE). For the ROA regression (model 16), for example, the coefficient of the "lack of awareness" dimension indicates that, holding everything else constant, a company moving from the 10th percentile in its lack of awareness score (0%) to the 90th percentile score (21.1%) would be on average associated with an average decrease in ROA by 2.4% per year. However, because the results for the five unethical culture dimensions were not statistically significant for all financial performance variables, it is not possible to conclude that they lead to poorer financial performance on an individual basis.

Robustness checks

As discussed in the methodology section, the research model raises relevant endogeneity concerns such as reverse causality and omitted variables. In addition to resorting to different econometric procedures and making use of alternative operational definitions for firm performance, this section provides additional robustness checks. I start by presenting in Table 8 the same set of regressions, this time with an alternative indicator of unethical culture that is computed based on the total number of times that words or terms associated with its five dimensions are mentioned by employees.

Table 8. Robustness check: The effect of an alternative indicator of unethical culture on financial performance

Dependent Variable	**ROA**				**ROE**				**NET PROFIT MARGIN**			
Method	**OLS**	**Dynamic OLS**	**Fixed-Effects**	**GMM-SYS**	**OLS**	**Dynamic OLS**	**Fixed-Effects**	**GMM-SYS**	**OLS**	**Dynamic OLS**	**Fixed-Effects**	**GMM-SYS**
Model	**(25)**	**(26)**	**(27)**	**(28)**	**(29)**	**(30)**	**(31)**	**(32)**	**(33)**	**(34)**	**(35)**	**(36)**
UNETHICAL_CULTURE (WORD COUNT)	***-0.024**** ***(-3.25)***	***-0.024**** ***(-2.18)***	*-0.016* *(-1.60)*	*-0.026* *(-1.60)*	***-0.078**** ***(-3.20)***	***-0.068**** ***(-1.87)***	***-0.081**** ***(-2.34)***	*-0.072* *(-1.19)*	***-0.020**** ***(-2.32)***	***-0.026**** ***(-2.04)***	***-0.020**** ***(-1.67)***	*-0.026* *(-1.45)*
FIRM SIZE	YES											
FINANCIAL_LEVERAGE	YES											
BRAZILIAN CAPITAL	YES											
SOUTHEAST REGION	YES											
LAGGED_PERFORMANCE	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
INDUSTRY DUMMIES	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES	NO	YES
YEAR DUMMIES	YES											
Constant	YES											
Number of observations	1,326	719	1,443	719	1,329	723	1,445	723	1,335	740	1,454	740
Number of groups			605	313			605	314			607	321
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Adjusted R-squared	0.087	0.131	0.016		0.043	0.099	0.014		0.079	0.167	0.010	
AR(1) test p-value				0.000				0.000				0.000
AR(2) test p-value				0.611				0.215				0.995
Hansen test p-value				0.176				0.230				0.067
Diff-in-Hansen tests p-value				0.080				0.460				0.324

Note: This table exhibits different regression models analyzing the effect of unethical culture on corporate performance. The dependent variables are ROA (models 25-28), ROE (models 29-32), and NET PROFIT MARGIN (models 33-36). The explanatory variable of interest is UNETHICAL_CULTURE_C, the total number of times that words or terms associated with the five unethical culture dimensions on employee reviews. Control variables are detailed in Table 3. Models 25, 29, and 33 report estimates from OLS regressions. Robust t-statistics are in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

Source: Elaborated by the author.

The results in Table 8 are qualitatively similar to the ones obtained with the main measure of unethical culture, although somewhat weaker. The coefficients were negative in all models but were not statistically significant in the System-GMM regressions. Because this is the most robust econometric procedure applied in this research, these somewhat weaker findings do not allow me to be conclusive on the influence of an unethical culture on financial performance using the alternative measure of unethical culture. As an additional robustness test, I created two dummy variables named "high unethical culture" and "low unethical culture" corresponding to the top and bottom quartiles of unethical culture scores, respectively. I then rerun all regressions using these variables in place of the main unethical culture indicator (results omitted for space reasons and available upon request). The results were once again qualitatively similar: coefficients for the high (low) unethical culture variable were negative (positive) in all specifications according to expectations, although they were not statistically significant in all regressions. In the case of the System-GMM regressions, for example, results were statistically significant for ROA, but not for the other two performance variables. Taking together, the results from the robustness tests were not as strong as those obtained in the original regressions, leading to the need for extra caution regarding the overall conclusion of the study.

CONCLUSION

I provide evidence of a negative link between financial performance and a measure of unethical culture based on text analysis of online reviews posted at a Brazilian subsidiary of the company-rating website Glassdoor. The results are obtained after controlling for firm characteristics, industry, and time fixed-effects in System-GMM regressions using a sample of Brazilian firms from 2014-2018. My general conclusion – that investing in a sound ethical environment pays off – is consistent with a blossoming literature on this field, such as Kaptein (2011a, 2011b), Huhtala et al. (2011), Moon and Choi (2014), Riivari and Lamsa (2014), Guiso et al. (2015), and Kangas et al. (2017).

Of the five dimensions that make up my measure of unethical culture, those related to organizational injustice, lack of awareness, and fear of retaliation are the ones with stronger negative correlations with performance. However, because the results were not consistent in all regression models with alternative profitability indicators, it was not possible to conclude that these unethical dimensions individually lead to poor corporate performance.

To my knowledge, this is the first paper to document a negative link between unethical culture and financial performance using text analysis based on online reviews. In particular, as my analysis covers a turbulent period in Brazil in which the country suffered a large bribery-related corporate scandal and its greatest recession in history, the results suggest that investing in an ethical culture may be a particularly relevant source of competitive advantage for companies in times of economic distress.

Nonetheless, my results should be interpreted with caution due to important limitations. Above all, my research model and the limited amount of public information about the companies of the sample raise relevant endogeneity concerns, such as reverse causality and the influence of omitted variables. Although I endeavor best efforts from the methodological standpoint to address such concerns, it is not possible to rule out that some results may be driven by spurious correlation. Consequently, causality running from unethical culture to increased financial performance cannot be claimed.

This research has implications for researchers and investors. For researchers, my analysis contributes to the literature on ethical culture by presenting an original measure of unethical culture based on text analysis of online reviews. Subsequent research on this field may resort to this measure as a starting point for the construction of objective indicators of unethical culture based on employee assessments. For institutional investors, this research reinforces the argument that the content of employee reviews, particularly comments related to ethical issues, are of significant value-relevance and should be explicitly accounted for in investment or divestment decisions.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

AUTHORS' CONTRIBUTIONS

This is a single authored article in which the author carried out by himself all the activities related to the research and preparation of the manuscript.