Revista de Contabilidade e Organizações
www.rco.usp.br

DOI: http://dx.doi.org/10.11606/issn.1982-6486.rco.2024.224767

Journal of Accounting and Organizations
www.rco.usp.br

Use of social media by the CEO and value relevance

Uso de mídia social pelo CEO e a relevância da informação contábil

Roberto Carlos Klann[a], Mikaéli da Silva Giordani[a]

[a] *Universidade Regional de Blumenau – Brazil*
[b] *Universidade Federal de Santa Maria – Brazil*

Keywords
CEO.
Social media.
LinkedIn.
Value relevance.

Abstract

The study addresses the role of CEOs as the leading corporate communicator and symbol of the company's identity, and how spreading their opinions through social media can affect the company. This research aimed to analyze the effect of CEOs' posts on LinkedIn social media, related to the companies where they work, on value relevance. The population consists of companies that make up the IBrX100. We analyzed annual data through OLS regressions with robust standard errors. The period of analysis addressed the time the last CEO of each company was in office. The results show that the CEO's use of social media contributes to the relevance of accounting information. Additionally, the sensitivity test showed that the greater the number of posts, likes, and comments, the greater the effect on market-to-book, suggesting that the interaction between the CEO and the market through LinkedIn improves the relevance of accounting information. The contribution of this study consists of empirical evidence that the CEO's communication on LinkedIn, checked through posts related to the firm, favors engagement with its stakeholders, observed through likes and comments, which may reflect on the company's value relevance to the market, and therefore affect the quality of accounting information.

Palavras-chave
CEO.
Mídia social.
LinkedIn.
Relevância da informação contábil.

Resumo

Aborda-se o papel dos CEOs como o principal comunicador corporativo e símbolo da identidade da empresa, sendo que a divulgação de suas opiniões por meio de mídias sociais pode afetar a empresa. Esta pesquisa objetivou analisar o efeito das publicações dos CEOs na mídia social do LinkedIn, relacionadas às empresas nas quais atuam, na relevância da informação contábil. A população é formada por empresas que compõem o IBrX100. Foram analisados dados anuais e operacionalizadas regressões OLS com erros padrão robustos. O período de análise correspondeu ao tempo de atuação do último CEO de cada empresa. Os resultados demonstram que o uso da mídia social pelo CEO contribui para a relevância da informação contábil. Adicionalmente, o teste de sensibilidade demonstrou que quanto maior o número de publicações, curtidas e comentários, maior o efeito no market-to-book, o que sugere que a interação entre CEO e o mercado por meio do LinkedIn melhora a relevância da informação contábil. A contribuição deste estudo consiste nas evidências empíricas de que a comunicação do CEO no LinkedIn, verificada por meio das publicações relacionadas à empresa, favorece o engajamento com os seus stakeholders, observado por meio das curtidas e comentários, o que pode refletir na relevância da informação contábil da empresa perante o mercado e, consequentemente, influenciar positivamente a qualidade da informação contábil.

Article information
Received: May, 03rd 2024
Approved: December, 23rd 2024
Published: February, 14th 2025
Responsible editor: Prof. Sílvio Hiroshi Nakao

Practical implications

The study addresses the use of LinkedIn by CEOs to disclose corporate information. This analysis provides direct evidence of the CEO's role in communicating this information and its impact on company's value. Such evidence can motivate managers and other company stakeholders to use social media.

Corresponding author: Tel. +55 (55) 3220-8000
E-mail: rklann@furb.br; mikagiordani@hotmail.com
Av. Roraima nº 1000 - Cidade Universitária Bairro - Camobi, Santa Maria - RS, 97105-900, Brazil.

1 INTRODUÇÃO

This study investigated the relationship between CEOs' corporate use of LinkedIn social media to disseminate company information and value relevance. Social media have become essential communication tools for organizations, as well as for their main managers, like CEOs (Capriotti & Ruesja, 2018). Hence, it is important to assess their communication on these channels and how the market reacts to this type of reporting.

The CEO is considered the main corporate communicator and symbol of the company's identity (Conte et al., 2017). Several CEOs, like Steve Jobs, Bill Gates, and Richard Branson, have managed effective relationships with a wide range of stakeholders due to their strong personalities and communication. The decision to keep communication with company's stakeholders depends on their activities, and is related to the development of organizational strategies (Ferns et al., 2008). In that environment, social media, such as LinkedIn, are facilitators that enable a direct, two-way, and real-time communication.

The leader influences how the company is perceived; hence, CEOs correspond to corporate spokespeople, who are actively visible and shape firms' reputation (Men, 2012). Therefore, the dissemination of the CEO's opinion can affect the company (Chatterji & Toffel, 2017), and those active on social media create bonds and establish a relationship of trust with stakeholders, increasing their personal and organizational reputation (Tsai & Men, 2017).

Literature shows evidence of the corporate use of social media and its impact on organizational environment. International studies, such as Arnaboldi et al.'s (2017), emphasize that the use of these tools by companies can improve organizational performance, through data collection and analysis on these channels. Zhang (2015) reports that firms that invest in social media resources influence investors and provide better returns to shareholders, which can increase value relevance. For Teoh (2018), companies' disclosure of information on social media enables a new source of data, useful for investors' decision-making.

In Brazil, several studies reported that the corporate use of social media improves organizational performance (Giordani et al., 2020), maximizes value relevance (Giordani & Klann, 2022), as well as the business use of Twitter (now X) moderates the relationship between corporate governance and organizational performance (Giordani et al., 2023).

However, little is known about the use of social media by CEOs for disclosing information on the company they work and value relevance. For Zhou et al. (2024), companies' CEOs are increasingly using social media to participate in online conversations and interact with stakeholders.

Men and Tsai (2016) argue that the public is motivated by thought leadership involving CEOs' actions on social media. Bai et al. (2019) report that CEOs' direct and assertive communications on social media lead their followers to notice corporate leaders as friendly and attentive models. When analyzing CEO communication on social media regarding the quality of accounting information, Giordani et al. (2023) showed that such communication is related to the practice of earnings management.

Therefore, we suggest that just as the use of social media by companies influences investors' decisions and increases organizational performance, value relevance, and shareholder returns, the aforementioned factors related to CEO's active presence on social media can influence market participants and, consequently, affect value relevance.

Value relevance is essential in the capital market, helping investors and other users make decisions. Financial statements are more relevant if the accounting information disclosed meets stakeholders' needs (Outa et al., 2017). In this regard, other information about the company, besides financial statements, may be relevant for decision-making, such as the disclosure made by the CEO on LinkedIn, addressed in this paper.

In light of the above, this study sought evidence of the effect of CEOs using social media on value relevance. We analyzed CEOS' posts about their companies on LinkedIn and their effect on value relevance. We chose LinkedIn due to a previous survey on social media used by CEOs.

The study addresses the use of social media by CEOs to disseminate corporate information, given the growing number of users virtually connected. According to Bai and Yan (2023), the effects of CEOs' ability to use social media have not been systematically checked. By relating their use of social media to value relevance, the study provides more direct evidence on the role of CEOs in passing on corporate information on social media and the impacts on companies' value, measured through value relevance.

According to Brown and Deng (2024), more studies are needed to understand the presence of CEOs in corporate communication activities on social media and the interaction with other groups outside the company. Despite the growing use of social media by many market participants, many CEOs do not communicate directly with stakeholders through these channels. Data show the low adoption of social media by CEOs, and the reasons are the potential legal and regulatory costs they may face, as well as the time spent on keeping the media up to date and an active communication (Elliott et al., 2018).

Therefore, the study seeks to contribute by showing the presence and involvement of CEOs in social media, through the disclosure of corporate information and its reflection on value relevance. The research is pertinent because discussions on the use of social media by CEOs can attract the attention of financial analysts and other market participants (Fang et al., 2024). Given these aspects, this study makes a practical contribution by identifying the use of social media and the disclosure of corporate information by CEOs in the Brazilian market.

Huang and Yeo (2018) argue that the fact that most CEOs are apprehensive regarding social media communication emphasizes the need for a broader guidance supported by empirical evidence. Hence, this study presents such evidence on the results of CEOs' use of social media, and can encourage the adoption of these tools for establishing communication and maximizing organizational value.

In addition, the study makes a theoretical contribution to the literature on the quality of accounting information, by noting that different information, disclosed on alternative media by CEOs, can affect value relevance. It also contributes to the United Nations' Sustainable Development Goals (SDG), especially on quality education, by enabling new knowledge.

2 BACKGROUND AND HYPOTHESIS DEVELOPMENT

Corporate leaders are the "face of the company", appearing as the human force behind its actions and results (Strand, 2014). It has been widely recognized that CEOs play a critical organizational role, especially for public relations purposes (Men & Tsai, 2016), and that their decisions directly affect a firm's success or failure (Bai et al., 2019).

CEOs' effective communication requires the appropriate use of communication tools (Argenti et al., 2005); therefore, the spread of digital tools has increasingly affected corporate leaders (Conte et al., 2017). Some international studies carried out by communication consulting firms (PRWeek/Burson-Marsteller, 2008) emphasize that digital media, especially personal social networks, are a good opportunity for increasing CEOs' visibility. With the growing demand for corporate transparency and authenticity driven by social media, audiences expect greater access to the ideas and vision of corporate leaders in more open discussions. The image of CEOs has evolved to become more visible, social, and accessible than ever before (Tsai & Men, 2016).

CEOs' communications on social media can facilitate spreading organizational information and answer questions directly to the public (Huang et al., 2018). However, just assuming the role of organizational spokesperson on social media is not sufficient, it is necessary to show leadership online, which implies a set of specific communication strategies for social media (Huang & Yeo, 2018).

Just like any other corporate communication, CEO's communication activities should be monitored and managed as part of organizational communication strategies (Capriotti & Ruesja, 2018; Christensen & Cornelissen, 2011). According to Zerfass et al. (2016), CEOs' positioning and communication will be more successful and sustainable if based on a solid management process. The CEO's opinion can attract public attention and affect the company in a positive or negative way (Chatterji & Toffel, 2017). Regarding the external audience, CEOs are corporate spokespeople who are actively visible and shape corporate reputation favorably (Men, 2012). Internally, CEOs influence employees' perceptions, attitudes, and performance through leadership and power.

The use of social media by CEOs was addressed by Porter et al. (2015), who found that the top CEOs of Fortune 500 companies adopted one-way communication with followers by using a more formal language than general Twitter users. Huang and Yeo (2018) examined how CEOs of the largest US companies (Fortune 1000) communicated on social media and the extent of public sharing of their messages. In short, the authors analyzed the level of engagement of CEOs on Twitter and the content they published, and provided a theoretical understanding of the factors underlying online influence, by assessing the status of the online communicator in terms of the message content.

Bai et al. (2019) studied the influence of CEO’s media appearance and the attention index on corporate performance, and found a significant impact on the company financial performance. Specifically, media broadcasting and attention ratings had a significant positive effect on corporate performance, and CEO’s appearance ratings on social media were consistently beneficial. Bai and Yan (2023) observed that the use of social media by the CEO moderates substantially the relationship between the company’s use of social media and organizational performance.

Zhou et al. (2024) examined the presence of CEOs on social media and the implications of their online involvement on corporate social performance. The results show that companies with CEOs present on social media have a higher level of social performance. In addition, the better the CEOs’ reputation, the greater the positive impact of their sociability on corporate social performance. Fang et al. (2024) found that CEOs with a higher reputation on social media and who establish communication with other Twitter users tend to maximize company revenues and have fewer incentives to take risks.

Elliott et al. (2018) observed how CEOs could develop investor’s trust, thus mitigating the effects of negative information. The results of an experiment showed that investors trusted CEOs more, and were more willing to invest in the company when they communicated positive news, followed by negative news, through a personal Twitter account, than when news came through the firm's investor relations website or by organizational media.

Men and Tsai (2016) explored how and why audiences engaged with corporate CEOs on social media, and why this involvement was important. The results showed that CEOs’ engagement with the public had significant positive effects on the perceptions of CEO authenticity and accessibility, which, in turn, influenced audience trust and satisfaction positively. Public engagement with CEOs on social media also affected directly the quality of relationships between the organization and the audience.

Other studies showed that CEO's involvement in social media made the brand more honest and trustworthy, contributed to connecting with current and potential customers at a more personal level, and offered the possibility of better understanding customers through more direct involvement and social listening (Brandfog, 2016; Domo & CEO.Com, 2015; Shandwick, 2012). In addition, it was a good way for CEOs to communicate directly with employees and help them understand and keep track of what was happening within the company (Brandfog, 2016; Shandwick, 2012). For Brown and Deng (2024), social media provide a rich and complex scenario where social ties can sometimes benefit financial aspects.

In contrast to the benefits mentioned by CEOs’ use of social media, Giordani et al. (2023) show that managers can use social media to appear friendlier and conceal earnings management practices. Those with greater power and reputation use accounting practices to manage results, and therefore reduce the quality of accounting information.

The above-mentioned evidence highlights the importance of evaluating the relationship between the CEO's use of social media and the quality of accounting information. Companies with information patterns and practices for disclosing accounting data have accounting figures most associated with share prices, showing greater relevance, a fact that increases the quality of accounting information and assists stakeholder decision-making (Outa et al., 2017). Value relevance, as a measure of the quality of accounting information, demonstrates the usefulness of information for users, especially investors.

Research on value relevance found a positive relationship with the adoption of international accounting standards (Barth et al., 2008; Cormier & Magnan, 2016). In Brazil, studies have shown that convergence to international standards has increased value relevance (Macedo et al., 2012); companies that acknowledge gains and losses conservatively have reduced value relevance (Silva et al., 2018); and investors perceive socio-environmental information as relevant (Degenhart et al., 2017).

Value relevance, reflected in stock market values, can be investigated using value relevance measures (Barth et al., 2001); there are several metrics in the literature, such as the one by Collins et al. (1997), which considers share price as an explained variable in the model, incorporating information from net equity and result. In the model proposed by Francis and Schipper (1999), it is measured by returns generated by shares, as the dependent variable, and information on accounting profits as independent or explanatory variables. Cormier and Magman’s (2016) model uses information on equity per share and return on equity to explain market-to-book, and R^2 is used as the main metric to assess value relevance (Ohlson, 1995).

In general, it is expected that information disclosed by CEOs about their companies through LinkedIn will be understandable and accessible to users, and provided in due time; together, these factors will result in an increase in the quality of accounting information. It is assumed that managing CEOs' communication on social media, as already shown for the corporate use of these media, can influence market participants, and therefore maximize value relevance, measured by companies' market value (Cormier & Magnan, 2016). More precisely, the authors examined the usefulness of the information for investors and market efficiency by checking if this information is relevant for decision-making.

Several studies have emphasized the role of CEOs, considering them as the main corporate communicator and symbol of corporate identity (Conte et al. 2017; Brann, 2014). Tsai and Men (2017) argue that direct and assertive communication favors CEOS' reputation, and social media facilitate it. Hence, it is expected that CEOs who keep active communication on LinkedIn social media, by publishing corporate information, will be perceived by the market in general as more engaged, attentive, and friendly, and that this set of factors will maximize their companies' value relevance. Given this context, we developed the following research hypothesis:

H_1: CEOs corporately active on LinkedIn social media increase value relevance.

3 METHODOLOGICAL PROCEDURES

The population of this study consisted of publicly traded companies that make up the Brazil Index or IBrX100. We made this choice because it corresponds to the 100 most tradable and representative assets on the Brazilian stock market (Brasil, Bolsa, Balcão [B3], 2021). In addition, since these are the most traded assets, we assumed they are the ones that attract the most interest from investors seeking information, including the information disclosed by CEOs on social media. We excluded firms in the financial sector because they have sector-specific characteristics and different accounting standards.

The sample was made up of companies that provided data for calculating the variables used in the value relevance model (Cormier & Magnan, 2016). Other information from social media was collected from this sample, which includes companies with CEOs who use or do not use LinkedIn social media.

This model analyzes the change in economic agents' expectations regarding future results, through the information content of published accounting figures. Therefore, accounting information is relevant if it affects share prices. Its application is justified because market-to-book is a more robust and widely accepted variable, considered as benchmark for market assessment. The authors argue that value relevance models that use share price/return as the dependent variable (Francis & Schipper, 1999) may have problems; if the company splits shares (one share divided into two new), its price would be reduced by half (Brown et al., 1999).

With regard to social media, we observed if CEOs of IBrX100 companies had LinkedIn social media. Next, we checked if they posted information about their firms on their own social media. We addressed LinkedIn because the initial survey found that 53% of the CEOs of IBrX100 companies had an account on this media, while on Twitter this figure was only 9%. To collect data, we developed filters with keywords related to the company where each CEO works. The words searched were company name, profit, performance, growth, results, merger, acquisition, and incorporation.

The period of analysis for each company was the length of service of the last CEO, according to a survey carried out in January 2021. Hence, each company had its data analyzed in different periods, ranging from 1 to 10 years. Data are unbalanced and were analyzed annually; that is why we did not use a panel in the regressions either. Data were stacked (POLS), and steady effects of sector and year were inserted. We excluded observations with negative values for net equity, since they could generate interpretative distortions in the model (Collins et al., 1997). Table 1 shows the population and sample data for the study.

Table 1.
Research population and sample

Items	Population	Sample
Companies	100	78
CEOs with LinkedIn	53	47
CEOs that publish corporate information on LinkedIn	48	44
Number of posts on LinkedIn	1,575	1,232
Number of likes on LinkedIn posts	1,043,881	699,600
Number of comments on LinkedIn posts	39,583	29,215

As for the research sample, over half of the CEOs have a LinkedIn account, and almost all publish information about their companies. On average, there are 28 pieces of information posted by CEO, with around 12,230 followers on LinkedIn. The variables used for calculating the value relevance model were extracted from the Refinitiv® database, and those relating to LinkedIn were collected from the social media.

Table 2.
Variables used in the study

Type of variable	Variable	Description	Collection	Source
Model of value relevance				
Dependent	MTB_{it}	Market-to-book - equity market value divided by equity book value of company i in period t	Refinitiv®	Cormier & Magnan (2016)
Independent	ES_{it}	1 divided by net equity per share of company i in period t		
	ROE_{it}	Return on equity – net profit divided by total net equity of company i in period t		
Social media variables				
Independent	POS	Logarithm of the number of posts related to CEO company on LinkedIn	LinkedIn	Paper authors
	LIK	Logarithm of the number of likes in posts related to CEO company on LinkedIn		
	COM	Logarithm of the number of comments in posts related to CEO company on LinkedIn		

Regarding data analysis, we first winsorized the variables (MTB, ES, ROE, POS, LIK and COM) at the 1% level, so as not to exclude observations and to approximate extreme observations (outliers). For the LinkedIn social media variables, we used the logarithm as a form of standardization, so that POS, LIK, and COM variables correspond to the logarithm of the number of posts, likes, and comments, accordingly. Next, we ran the Shapiro-Wilk normality test, which showed that the residuals did not have a normal distribution (Z = 6,281; p<0.000). Then we did Pearson and Spearman correlations, and finally, to meet the study goal, we conducted Ordinary Least Square (OLS) regressions, with robust standard errors (with White's correction) and steady effect control for sector and year, using STATA software. The empirical models are shown in Equations 1 and 2:

Equation 1

$$MTB_{it} = \propto_1 + \beta_1 ES_{it} + \beta_2 ROE_{it} + \sum fixed\_effects\_sector_i + \sum fixed\_effects\_year_i + \varepsilon_{it}$$

Equation 2

$$MTB_{it} = \propto_1 + \beta_1 ES_{it} + \beta_2 ROE_{it} + \beta_3 SM_{it} + \beta_4 SM_{it} * MS_{it} + \beta_5 ROE_{it} * SM_{it} + \sum fixed\_effects\_sector_{it} + \sum fixed\_effects\_year_i + \varepsilon_{it}$$

Equation 1 corresponds to Cormier and Magnan's (2016) value relevance model. Equation 2 corresponds to the insertion of LinkedIn variables into the value relevance model; therefore, SM_{it} corresponds to the logarithm of the number of posts, likes, and comments. We separated regressions for each social media variable.

The use of robust regression is justified because the White test was significant (P = 42,68; p<0.000), indicating the presence of heteroscedasticity. Despite the non-normality of the residuals, this assumption of the OLS regression was abandoned by considering the Central Limit Theorem, given the number of observations. In addition, we checked the multicollinearity between the variables by using the Variance Inflation Factor (VIF) test, and the autocorrelation of the residuals through the Breusch-Godfrey test, whose results are shown in the next section.

To strengthen the results, we carried out a sensitivity test, by inserting moderating variables into the model to jointly analyze if the CEO posts and market reaction, checked through likes and comments, had an impact on value relevance.

4 RESULT PRESENTATION AND ANALYSIS

Table 3 shows the descriptive statistics of the variables, which corresponds to mean, standard deviation, 25th percentile, median, and 75th percentile. Panel A comprises the whole sample, and in Panel B companies were separated in two groups, the first corresponding to those whose CEOs posted information on LinkedIn, and the second regarding firms whose CEOs did not. Panel B shows the mean and standard deviation of each variable, in addition to the Mann-Whitney test, in order to check for significant differences between the two groups.

Table 3.
Descriptive statistics

Panel A – Total Sample					
Variable	Mean	Std. Deviation	Percentile 25	Median	Percentile 75
MTB	3.104	2.731	1.186	2.183	3.941
ES	0.221	0.236	0.069	0.136	0.244
ROE	0.118	0.082	0.046	0.111	0.186

Panel B – Firms with CEOs that posted or not on LinkedIn					
	Posted on LinkedIn		No posts on LinkedIn		Mann Whitney test
	Mean	Std. Deviation	Mean	Std. Deviation	
MTB	3.086	2.936	3.110	2.731	0.139
ES	0.148	0.222	0.249	0.236	0.493
ROE	0.103	0.082	0.124	0.082	1.127
POS	2.756	1.106			
LIK	8.635	1.677			
COM	5.447	1.729			

Note: MTB = Market-to-book; ES =1/Net equity per share; ROE = Return on equity; POS = Posts; LIK = Likes; COM = Comments. Significance levels of Mann-Whitney test: *** p<0.01.

In Table 3, Panel A, companies in the sample have a market value 3 times higher than their equity value, with an average return on equity of 11%, slightly higher than those by Silva et al. (2018). However, these authors analyzed all Brazilian publicly traded companies, while our study addresses IBrX100 firms. Panel B shows the total sample separated between companies whose CEOs post/do not post information on LinkedIn social media. The Mann-Whitney test showed no statistically significant differences between the groups, regarding the variables market-to-book, ES, and ROE. On average, companies with/without information posted by CEOs have similar figures for these variables.

As for LinkedIn social media variables, Panel B shows the companies with posts by their CEOs. The logarithmic numbers indicate that, on average, the companies have 2,756 posts, 8,635 likes, and 5,447 comments. In nominal values, the means correspond to 28 posts, 15,900 likes, and 664 comments for the group of companies whose CEOs post corporate information on LinkedIn.

Table 4 shows Pearson's correlation matrix above the main diagonal, and Spearman's correlation matrix below it.

Table 4.
Pearson and Spearman correlation matrices

Variable	MTB	ES	ROE	POS	LIK	COM
MTB	1	0.713**	0.225**	-0.031	-0.007	-0.009
ES	0.699**	1	0.145**	-0.150*	-0.182*	-0.166*
ROE	0.276**	0.124**	1	-0.084	-0.122*	-0.123*
POS	-0.032	-0.084	-0.099	1	0.908**	0.922**
LIK	0.000	-0.100	-0.124**	0.919**	1	0.982**
COM	0.007	-0.083	-0.124**	0.915**	0.976**	1

Note: MTB = Market-to-book; ES =1/Net equity per share; ROE = Return on equity; POS = Posts; LIK = Likes; COM = Comments. Levels of significance: ** p<0.01.

With regard to the value relevance model, Table 4 shows that explanatory variables were correlated with the dependent variable. Specifically, ES and ROE were significantly linked to MTB in both correlations. This result is similar to Cormier and Magnan's (2016), who also showed a significant correlation between ROE and MTB.

As for the study's variables of interest (social media), we found that, in both matrices, the variables were not correlated with the dependent variable (MTB) of the value relevance model. In a preliminary assessment, these results differed from what was expected. In addition, there was a high correlation, above 90%, between social media variables, which justifies the regression carried out for each variable.

Table 5 shows the results of the relationship between the use of LinkedIn social media by CEOs to disclose information about their companies and value relevance, measured through Cormier and Magnan's model (2016), our research focus. Analysis data are annual.

Table 5.
Value relevance and use of social media by the CEO

Dependent variable: Market-to-book (MTB)							
Variables	Mod. 1 Coefficient (Est. *t*)	Mod. 2 Coefficient (Est. *t*)	Mod. 3 Coefficient (Est. *t*)	Mod. 4 Coefficient (Est. *t*)	Mod. 5 Coefficient (Est. *t*)	Mod. 6 Coefficient (Est. *t*)	Mod. 7 Coefficient (Est. *t*)
Constant	-0.822 (-0.74)	-0.816 (-0.72)	-0.725 (-0.65)	-0.751 (-0.66)	-0.696 (-0.63)	-0.767 (-0.68)	-0.721 (-0.65)
ES	8.326*** (13.30)	8.327*** (13.27)	8.007*** (12.43)	8.369*** (13.20)	7.886*** (11.91)	8.353*** (13.24)	7.972*** (12.17)
ROE	4.235*** (3.04)	4.242*** (3.05)	3.458** (2.38)	4.407*** (3.23)	4.250*** (2.88)	4.362*** (3.19)	4.129*** (2.87)
POS	-	0.007 (0.08)	-0.559*** (-2.07)	-	-	-	-
LIK	-	-	-	0.034 (0.93)	-0.117* (-1.85)	-	-
COM	-	-	-	-	-	0.041 (0.74)	-0.162 (-1.68)
ES*POS	-	-	2.195*** (2.65)	-	-	-	-
ROE*POS	-	-	2.135* (1.86)	-	-	-	-
ES*LIK	-	-	-	-	0.759** (2.42)	-	-
ROE*LIK	-	-	-	-	0.361 (0.83)	-	-
ES*COM	-	-	-	-	-	-	0.949** (2.08)
ROE*COM	-	-	-	-	-	-	0.550 (0.81)
Joint F Test							
ES+ES*POS/LIK/COM			91.73***		82.46***		83.28***
ROE+ROE*POS/LIK/COM			6.57***		6.63***		6.03***
FE Sector	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sig. Mod.	0.000	0.000	0.000	0.000	0.000	0.000	0.000
R^2	62.46	62.46	64.32	62.61	64.72	62.56	64.13
R^2 aj.	59.63	59.48	61.19	59.64	61.62	59.58	60.99
VIF	1.17–1.38	1.17–1.39	1.42–5.59	1.19–1.47	1.48-5.08	1.18–1.45	1.47–4.95
BG	0.229***	0.221***	0.093***	0.093***	0.031***	0.126***	0.037***
N	286	286	286	286	286	286	286

Note: MTB = Market-to-book; ES =1/Net equity per share; ROE = Return on equity; POS = Posts; LIK = Likes; COM = Comments; Mod. = Model; Coef. = Coefficient; Est. t = t statistics; FE Sector = Fixed effects sector; FE Year = Fixed effects year; Sig. Mod. = Model significance; VIF = Variance Inflation Factor; BG = Breusch-Godfrey; N = number of observations. Significance levels: * $p<0.1$; ** $p<0.05$; *** $p<0.01$.

All regression models were significant. The assumptions of autocorrelation of the residuals and multicollinearity of the variables were tested and did not present any problems, as shown in Table 5 by the Breusch-Godfrey and VIF tests, respectively.

With regard to value relevance, the tested model (Cormier & Magnan, 2016) showed an explanatory power of 59.63%. In terms of significance, the variables equity (ES), defined by the inverse of PL, and return on equity (ROE) showed a positive and significant relationship with the dependent variable (MTB), at 1% level. This suggests that information on companies' equity and profitability is relevant to the market.

As for the study's goal - to check the effect of the CEO's corporate use of LinkedIn social media on value relevance, we observed that, in general, the moderations between social media variables (POS, LIK, and COM) and ES show a positive and significant relationship with MTB. For the return on equity (ROE), only the moderation with the number of posts made by the CEO (ROE*POS) was positive and significant regarding MTB.

These findings indicate that companies with CEOs who post more on LinkedIn social media and receive more likes and comments on these posts, present a net equity more relevant to the market. Regarding ROE, the results suggest that just CEO's posts contribute to increasing its market relevance. When looking at the explanatory power of the model (adjusted R2), the main metric for assessing value relevance, there was an average increase of more than 1.5% (comparing the adjusted R^2 of model 1 with models 3, 5, and 7), which strengthens the maximization of explanatory power by including social media variables.

In economic terms, moderations show that, for a company reporting a ES of 0.1, a rate of 0.626 (equivalent to the mean of the logarithm of the number of posts) implies an increase in market-to-book of 0.93 (8.007*0.1+2.195*0.626*0.1)[1]. As for the number of likes, a rate of 2.217 (equivalent to the mean of the logarithm of the number of likes) implies an increase in the market-to-book of 0.95 (7.886*0.1+0.759*2.217*0.1)[1]; and regarding the number of comments, a rate of 1.347 shows an increase in market-to-book of 0.92 (7.972*0.1+0.949*1.347*0.1)[1].

The effect for ROE indicates that a company that reports a return on equity of 0.1, at a rate of 0.626, implies market-to-book maximization of 0.47 (3.458*0.1+2.135*0.626*0.1)[1]. In general, the number of posts made by the CEO on LinkedIn social media, as well as the likes and comments on these posts, affected the relevance of ES and ROE to the market.

With regard to net equity (ES) and return on equity (ROE), evidence does not enable rejecting the research hypothesis H_1, as we found that CEOs who are corporately active on LinkedIn social media contribute to value relevance. This confirms Men and Tsai's (2016), who found that successful and communicative CEOs create a positive image that improves the identification of its members with the company, as well as with external investors, creating a favorable reputation and developing positive relationships. These results also confirm the studies by Domo and CEO.Com (2015) and Shandwick (2012), which showed that a CEO's presence on social media benefits the organization and his/her own reputation. This study provided evidence that CEO's communication through LinkedIn social media affects value relevance positively, more specifically the company value.

Despite the significant number of CEOs in the sample that use LinkedIn social media to post corporate information, Porter et al. (2015) highlight that many senior executives distrust the credibility and value of social media, thus contributing to the absence of many CEOs on this means of communication. Therefore, this study adds knowledge on the benefits of using social media, since posts, likes, and comments about a company can influence market participants and provide positive returns for the organization.

Still, the fact that the CEO is considered the company' identity (Conte et al., 2017) and keeps direct and instant communication with stakeholders affects the way they see the organization, and can create a favorable reputation in the market, besides maximizing its value. Our results contribute to the literature by exploring the effect of CEO communication on social media (Bai & Yan, 2023; Brown & Deng, 2024).

In order to strengthen the results, we carried out a sensitivity test. Social media variables were analyzed together, to check if the interaction between CEO posts and market reaction, through likes and comments, had an effect on value relevance. Table 6 shows the results.

Table 6.
Sensitivity test

Variables	Dependent variable: Market-to-book (MTB)			
	Mod. 8 Coefficient (Est. *t*)	Mod. 9 Coefficient (Est. *t*)	Mod. 10 Coefficient (Est. *t*)	Mod. 11 Coefficient (Est. *t*)
Constant	-0.764 (-0.68)	-0.830 (-0.75)	-0.783 (-0.69)	-0.855 (-0.77)
ES	8.345*** (13.22)	8.015*** (12.01)	8.340*** (13.25)	8.078*** (12.28)
ROE	4.352*** (3.18)	4.312*** (3.17)	4.305*** (3.13)	4.142*** (3.02)
POS*LIK	0.019 (0.72)	-0.110** (-2.38)	-	-
POS*COM	-	-	0.017 (0.49)	-0.160** (-2.43)

Table 6.
Sensitivity test

Variables	Dependent variable: Market-to-book (MTB)			
	Mod. 8 Coefficient (Est. *t*)	Mod. 9 Coefficient (Est. *t*)	Mod. 10 Coefficient (Est. *t*)	Mod. 11 Coefficient (Est. *t*)
ES*POS*LIK	-	0.852*** (2.73)	-	-
ES*POS*COM	-	-	-	1.157** (2.49)
ROE*POS*LIK	-	0.114** (2.58)	-	-
ROE*POS*COM	-	-	-	0.156** (2.37)
Joint F Test				
ES/ROE+ES/ROE*POS*LIK		93.14***		90.22***
ES/ROE+ES/ROE*POS*COM		7.36***		6.88***
FE Sector	Yes	Yes	Yes	Yes
FE Year	Yes	Yes	Yes	Yes
Sig. Mod.	0.000	0.000	0.000	0.000
R^2	62.55	64.73	62.50	64.40
R^2 aj.	59.57	61.63	59.52	61.28
VIF	1.18 – 1.47	1.20 – 8.18	1.18 – 1.45	1.20 – 10.40
BG	0.125***	0.010***	0.163***	0.010***
N	286	286	286	286

Note: MTB = Market-to-book; ES = Share price; ROE = Return on equity; POS = Posts; LIK = Likes; COM = Comments. Mod. = Model; Coef. = Coefficient; Est. *t* = *t* statistics; FE sector = Fixed effects sector; FE year = Fixed effects year; Sig. Mod. = Model significance; VIF = Variance Inflation Factor; BG = Breusch-Godfrey; N = number of observations. Significance levels: * p<0.1; ** p<0.05; *** p<0.01.

Regression models were significant and all assumptions were met. In terms of significance, as in Table 5, the explanatory variables of the value relevance model (ES and ROE) showed a positive and significant relationship with MTB, and confirm the main analysis.

The indicator of value relevance, adjusted R^2, showed an increase of around 2% when social media variables were included in the model together. With regard to the interactions of ES and ROE with the variables POS, LIK, and COM (Models 9 and 11), we found a positive and significant relationship with MTB, suggesting that the market considers more relevant information on net equity and return on net equity of companies with a higher number of CEO posts, which had the greatest impact (likes and comments) on social media.

Economically, moderations show that, for a company reporting a ES of 0.1, a rate of 2.849 (equivalent to the mean of the logarithm of the number of posts and likes) implies an increase in market-to-book of 1.0 (8.015*0.1+0.852*2.849*0.1)[1]. For the interaction between posts and comments, a rate of 1.982 (equivalent to the mean of the logarithm of the number of posts and comments) implies an increase in market-to-book of 1.0 (8.078*0.1+1.157*1.982*0.1)[1].

Regarding ROE, the interaction with social media variables together also proved to be positive and significant in relation to the company's market value. This indicates that firms with a greater number of CEO posts, and with more likes and comments on them, have a more relevant return on equity to the market. For a company reporting a ROE of 0.1, for example, a rate of 2.849 (equivalent to the mean of the logarithm of the number of posts and likes) increases market value by 0.46 (4.312*0.1+0.114*2.849*0.1)[1]. As for the ROE*POS*COM interaction, the company that reports a ROE of 0.1, a rate of 1.982 (equivalent to the mean of the logarithm of the number of posts and comments), shows a market-to-book maximization of 0.44 (4.142*0.11+0.156*1.982*0.11)[1].

Furthermore, we tested the value relevance model by Collins et al. (1997), which explains share price in the third month after the end of the financial year through earning per share and net equity per share. The results (additional material) showed that posts, likes, and comments affect equity relevance for share price negatively. Specifically, for companies whose CEOs are more active on LinkedIn, accounting information on net equity is less relevant.

A potential explanation for this divergent result between the main model (Cormier & Magnan, 2016) and Collins et al.'s (1997) model is that the latter uses as dependent variable the share price 3 months after the end of the financial year, while the former uses MTB at the end of the financial year. Therefore, for CEOs more active

[1] Note: Untabulated data for the general sample: mean of the variable posts (POS) is 0.626; standard deviation of the variable posts (POS) is 1.270; mean of the variable Likes (LIK) is 2.217; standard deviation of the variable Likes (CUR) is 3.760; mean of the variable comments (COM) is 1.347; standard deviation of the variable comments (COM) is 2.450; mean of the number of posts and likes (POS*LIK) is 2.849; mean of the number of posts and comments (POS*COM) is 1.982.

on LinkedIn, market reaction can be anticipated, as stakeholders would have other sources of information about the company, such as social media, which can even help predicting results. Hence, information on net equity would not affect the share price in March of the following year, as it would have already been priced in by the market before then, especially for companies with active CEOs on social media. Another difference between the two models, which may justify the distinct results, is that Cormier and Magnan (2016) use equity (ES) growth as explanatory variable (Dalvizio et al., 2020), while Collins et al. (1997) use equity per share.

In short, our study provides evidence that social media, such as LinkedIn, which enable interactivity, connectivity, and real-time communication, brought about a paradigm shift in market relations and engagement. Social media's ability for connection and reach is not accessible through traditional communication channels (Men & Tsai, 2016).

We found that social media offer unprecedented opportunities for organizations and their main leaders to engage with stakeholders in a more personal and meaningful way, which can maximize companies' value. In addition, they contribute to the problem addressed by Bai and Yan (2023) and Brown and Deng (2024), who highlight the need for broader orientation on CEO's presence and communication on social media, supported by empirical evidence.

Furthermore, this study confirms Conte et al. (2017), who argue that the CEO is the main corporate communicator. The findings allow inferring that the CEO's communication on LinkedIn, checked through posts related to the company, favors engagement with stakeholders, observed through likes and comments. Besides engagement, CEOs' activity on social media can lead them to achieve a better reputation and be seen by market participants as more attentive and friendlier, which can reflect on a better assessment of the company by the market and influence market-to-book and the quality of accounting information positively.

Finally, the results confirm previous studies on disclosing socio-environmental information (Degenhart et al., 2017) and adopting international standards (Macedo et al., 2012), proving their relevance to information users, by highlighting a new factor that also affects value relevance. This factor refers to corporate information disclosed by the CEO on social media, considered significant for investors, which can improve the decision-making process.

5 CONCLUSION

The main results of this research show that the CEO's corporate use of LinkedIn social media affects value relevance, in a sample of Brazilian companies from IBrX 100. Their use was measured through the number of posts about their firms, as well as the likes and comments received. We used Cormier and Magnan's model (2016) to measure value relevance.

In general, the results show that the CEO's engagement with LinkedIn social media, checked through posts on the company and the reaction to these posts through likes and comments, make the information on net equity and return on equity more relevant to market participants. The findings indicate that the interactions between the number of posts, likes, and comments and net equity, as well as the interaction between posts and ROE, lead to a market-to-book effect, shown by a positive and significant relationship. This suggests that the presence and communication between the CEO and other users on LinkedIn social media improves the relevance of net equity and ROE to the market. Therefore, in addition to the CEO being active and posting corporate information, market reaction, through likes and comments, strengthens engagement and contributes to making the financial information disclosed more relevant. In view of the above, research hypothesis H_1 was not rejected.

Theoretically, the paper adds to the literature by identifying a new factor that affects value relevance, which is the use of social media by CEOs, specifically LinkedIn, in our case. From a practical perspective, the article contributes by presenting evidence that LinkedIn social media has been strongly used by the CEOs in the sample, and provides guidance on their presence and communication on LinkedIn. Such results can stimulate the adoption of social media by other CEOs. For company stakeholders, these channels serve as a source of information and as a means of keeping direct and timely communication with key organizational leaders.

This research has some limitations, such as the impossibility of generalizing the results, since only companies listed on IBrX 100 were analyzed, which considerably restrained the number of firms in the sample. The social media addressed and the terms used for searching financial information can also be considered a limitation, and another one was the period of analysis, since it covered the time in office of the last CEO, as observed in January 2021. However, investigating other social media, seeking different terms, and extending the period of analysis are suggestions for future research.

REFERENCES

Argenti, P.A, Howell, R.A. & Beck, K.A. (2005), "The strategic communication Imperative", *MIT Sloan Management Review*, *46* (3), 83-89.

Arnaboldi, M., Busco, C., & Cuganesan, S. (2017). Accounting, accountability, social media and big data: revolution or hype? *Accounting, Auditing & Accountability Journal*, *30* (4), 762-776. https://doi.org/10.1108/AAAJ-03-2017-2880

Bai, L., Yan, X., & Yu, G. (2019). Impact of CEO media appearance on corporate performance in social media. *The North American Journal of Economics and Finance*, *50*, 100996. https://doi.org/10.1016/j.najef.2019.100996

Bai, L., & Yan, X. (2023). Impact of social media capability on firm performance: New evidence from China. *Asian Business & Management*, *22*(1), 118-136. https://doi.org/10.1057/s41291-021-00156-0

Barth, M. E., Landsman, W. R., & Lang, M. H. (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, *46*(3), 467-498. https://doi.org/10.1111/j.1475-679X.2008.00287.x

Brandfog (2016). CEOs, social media and brand reputation. 2016 Brandgof Survey. http://brandfog.com/BRANDfog2016CEOSocialMediaSurvey.pdf (Acessado em 6 Maio 2021).

Brann, P.S. (2014). How others see us: Leaders' Perceptions of Communication and Communication Managers", *Journal of Communication Management*, *18* (1), 58-79. https://doi.org/10.1108/JCOM-03-2013-0028

Brown, S., Lo, K., & Lys, T. (1999). Use of R2 in accounting research: measuring changes in value relevance over the last four decades. *Journal of Accounting and Economics*, *28*(2), 83-115. https://doi.org/10.1016/S0165-4101(99)00023-3

Brown, J. O., & Deng, E. K. (2024). The Ties That Bind: A Systematic Review of Behavioral Research on Social Bonds and Social Ties in Accounting. Behavioral Research in Accounting, 1-26. https://doi.org/10.2308/BRIA-2023-047

Capriotti, P., & Ruesja, L. (2018). How CEOs use Twitter: A comparative analysis of Global and Latin American companies. *International journal of information management*, *39*, 242-248. https://doi.org/10.1016/j.ijinfomgt.2018.01.003

Chatterji, A. K., & Toffel, M. W. (2017). Do CEO activists make a difference? Evidence from a quasi-field experiment. Harvard Business School.

Christensen, L. T., & Cornelissen, J. (2011). Bridging corporate and organizational communication: Review, development and a look to the future. Management Communication Quarterly, *25* (3), 383–414. https://doi.org/10.1007/978-3-531-18961-1_3

Collins, D. W., Maydew, E. L., & Weiss, I. S. (1997). Changes in the value-relevance of earnings and book value over the past forty years. Journal of Accounting and Economics, *24 (*1), 39-67. https://doi.org/10.1016/S0165-4101(97)00015-3

Conte, F., Siano, A., & Vollero, A. (2017). CEO communication: engagement, longevity and founder centrality: an exploratory study in Italy. *Corporate Communications: An International Journal*. https://doi.org/10.1108/CCIJ-10-2015-0062

Cormier, D., & Magnan, M. L. (2016). The advent of IFRS in Canada: incidence on value relevance. *Journal of International Accounting Research*, *15* (3), 113-130. https://doi.org/10.2308/jiar-51404

Degenhart, L., Mazzuco, M. S. A., & Klann, R. C. (2017). The relevance of accounting information and the corporate social responsibility of Brazilian companies. *BASE-Revista de Administração e Contabilidade da Unisinos*, *14* (3), 157-168.

Delvizio, P., Macedo, M. A., Queiroz, J., & Lopes, P. (2020). Análise do efeito moderador da liquidez no modelo de relevância da informação contábil no Brasil. *Advances in Scientific and Applied Accounting*. 13(2), 67–088. https://doi.org/10.14392/ASAA.2020130204

Domo, & CEO.Com (2015). 2015 social CEO report http://www.ceo.com/social-ceoreport-2015-report/

Elliott, W. B., Grant, S. M., & Hodge, F. D. (2018). Negative news and investor trust: The role of $ Firm and# CEO Twitter use. *Journal of Accounting Research*, *56* (5), 1483-1519. https://doi.org/10.1111/1475-679X.12217

Fanelli, A., & Misangyi, V. F. (2006). Bringing out charisma: CEO charisma and external stakeholders. Academy of Management Review, *31* (4), 1049–1061. https://doi.org/10.5465/amr.2006.22528170

Fang, Y., Bao, X., Sun, B. & Lau, R.Y.K. (2024), "CEO social media celebrity status and credit rating assessment", Internet Research, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/INTR-02-2023-0084

Ferns, B., Emelianova, O. & Sethi, S.P. (2008), "In His Own Words: The Effectiveness of CEO as Spokesperson on CSR-Sustainability Issues - Analysis of Data from the Sethi CSR Monitor", *Corporate Reputation Review*, *11* (2), 116-129. https://doi.org/10.1057/crr.2008.11

Francis, J., & Schipper, K. (1999). Have financial statements lost their relevance?. *Journal of accounting Research*, *37*(2), 319-352. https://doi.org/10.2307/2491412

Giordani, M., & Klann, R. C. (2022). Uso Corporativo de Mídias Sociais e a Relevância da Informação Contábil. *Advances in Scientific and Applied Accounting*, *15* (1). doi.10.14392/asaa.2022150102

Giordani, M., Lunardi, M. A., & Klann, R. C. (2020). Uso corporativo de mídias sociais e o desempenho de mercado. *Revista de Contabilidade e Organizações*, *14*, Artigo e169560. https://doi.org/10.11606/issn.1982-6486.rco.2020.169560

Giordani, M., Barbosa, I., & Klann, R. C. (2023). Uso de Mídia Social pelo CEOs e o Gerenciamento de Resultados. *Revista de Educação e Pesquisa em Contabilidade (REPeC)*, *17* (3). https://doi.org/10.17524/repec.v17i3.322

Huang, L. V., & Yeo, T. E. D. (2018). Tweeting# Leaders: Social media communication and retweetability of fortune 1000 chief executive officers on Twitter. *Internet Research*, *28* (1), 123-142. https://doi.org/10.1108/IntR-08-2016-0248

Macedo, M. A., de Araújo, M. B. V., & Braga, J. P. (2012). Impacto do processo de convergência às normas internacionais de contabilidade na relevância das informações contábeis. *Revista de Educação e Pesquisa em Contabilidade (REPeC)*, *6*(4). https://doi.org/10.17524/repec.v6i4.611

Men, L. R. (2012). CEO credibility, perceived organizational reputation, and employee engagement. Public Relations Review, *38*, 171–173. https://doi.org/10.1016/j.pubrev.2011.12.011

Men, L. R., & Tsai, W.-H. S. (2016). Public engagement with CEOs on social media: Motivations and relational outcomes. Public Relations Review, *42*, 932–942. https://doi.org/10.1016/j.pubrev.2016.08.001

Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary accounting research*, *11*(2), 661-687.

Outa, E. R., Ozili, P., & Eisenberg, P. (2017). IFRS convergence and revisions: value relevance of accounting information from East Africa. *Journal of Accounting in Emerging Economies*, *7*(3), 352-368.

Porter, M.C., Anderson, B. & Nhotsavang, M. (2015), "Anti-social media: Executive Twitter 'engagement' and attitudes about media credibility", *Journal of Communication Management*, *19* (3), 270–287. https://doi.org/10.1108/JCOM-07-2014-0041

PRWeek/Burson-Marsteller (2008), "CEO Survey", 10 November, available at:http://pdfsr.com/pdf/2008-burson-marsteller-pr-week-ceo-survey

Shandwick W. (2012). The social CEO: Executives tell all. https://www.webershandwick.com/uploads/news/files/Social-CEO-Study.pdf (Acessado em 18 Maio 2021).

Silva, A., Heinzen, C., Klann, R., & Lemes, S. (2018). Relação entre o Conservadorismo Contábil e a Relevância das Informações. *Advances in Scientific & Applied Accounting*, *11*(3).

Strand, R. (2014). Strategic Leadership of Corporate Sustainability. *Journal of Business Ethics*, *123* (4), 687–706. https://doi.org/10.1007/s10551-013-2017-3

Teoh, S. H. (2018). The promise and challenges of new datasets for accounting research. *Accounting, Organizations and Society*, *68*, 109-117. https://doi.org/10.1016/j.aos.2018.03.008

Tsai, W. H. S., & Men, L. R. (2017). Social CEOs: The effects of CEOs' communication styles and parasocial interaction on social networking sites. *New media & society*, *19* (11), 1848-1867. https://doi.org/10.1177/1461444816643922

Zerfass, A., Verčič, D., & Wiesenberg, M. (2016). Managing CEO communication and positioning: A cross-national study among corporate communication leaders. *Journal of Communication Management*, 20 (1), 37–55. https://doi.org/10.1108/JCOM-11-2014-0066

Zhang, J. (2015). Voluntary information disclosure on social media. *Decision Support Systems*, *73*, 28-36. https://doi.org/10.1016/j.dss.2015.02.018

Zhou, J., Ye, S., & Liu, X. (2024). More social, more socially responsible? The impact of CEO social media use on corporate social performance. *British Journal of Management*, *35*(3), 1592-1608. https://doi.org/10.1111/1467-8551.12774.

How to cite this paper

Klann, R. C., & Giordani, M. S. (2024). Use of social media by the ceo and value relevance. *Revista de Contabilidade e Organizações*, 18:e224767. DOI: http://dx.doi.org/10.11606/issn.1982-6486.rco.2024.224767