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Nudge: Pushing earning management away

Nudge: Empurrando para longe o gerenciamento de resultados

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Keywords
Nudge.
Earning management.
Accounting professionals.

Abstract

This research aimed to verify the effects of using nudges in reduction of earnings management. The study was classified as a between-subjects experiment. The sample consisted of 40 accountants. Descriptive statistics, analysis of variance, structural equation model, and mean tests were used for data analysis and interpretation. The results revealed three main findings, as support for the developed hypotheses. First, the level of earnings management by accounting professionals is lower in the presence of nudges than in their absence; second, the level of earnings management by accounting professionals is lower in the presence of an injunctive nudge issued by the leader than in its absence; and third, there is no difference in the level of earnings management by accounting professionals when the descriptive nudge is issued by the leader, compared to the absence of it.

Palavras-chave
Nudges.
Gerenciamento de resultados.
Profissionais contábeis.

Resumo

Esta pesquisa teve por objetivo verificar os efeitos da utilização dos nudges *na redução do gerenciamento de resultados. O estudo se classificou como um experimento do tipo entre sujeitos (*between-subject*). A amostra foi composta por 40 contadores. Para a análise e interpretação dos dados, utilizou-se de estatísticas descritivas, análise de variância, modelo de equações estruturais e testes de médias. Os resultados evidenciaram três achados principais, demonstrando suporte para as hipóteses desenvolvidas. Primeiro, o nível de gerenciamento de resultados dos profissionais contábeis é menor na presença do que na ausência de* nudges*; segundo, o nível de gerenciamento de resultados dos profissionais contábeis é menor na presença do que na ausência de* nudge *injuntivo emitido pelo líder; e terceiro, que não existe diferença no nível de gerenciamento de resultados dos profissionais contábeis quando o* nudge *descritivo é emitido pelo líder, em comparação à ausência de* nudge*.*

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Practical implications

Nudges are helpful for i) managers and owners interested in maintaining the quality of information, as they can guide those involved in preparing financial statements. It is a simple tool, easy to implement, and with low financial cost; ii) investors and financial institutions, as they allow for obtaining financial reports with higher informational quality; iii) regulatory entities, by directing professional training towards accounting standardization that ensures information quality; iv) accounting professionals, as they make decisions and generate information that is useful to users.

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1 INTRODUCTION

Agency Theory clarifies that if the principal (shareholders) and the agent (executives) are utility maximizers, it is natural to believe that the agent will not always act in the principal's interests (Jensen & Meckling, 1976). Based on the accounting Choices Theory, considering the interest divergences, there are reasons to analyze how financial information is prepared from several valid accounting practices to address the same economic event (Watts & Zimmerman, 1986, 1990). This flexibility became possible through the use of International Financial Reporting Standards (IFRS) for the preparation and disclosure of accounting reports, as they aim to have a global application based on principles, which consequently increases the level of used subjectivity by the preparers of the financial statements (Silva et al., 2016).

In this regard, the discretion and subjectivity of accounting choices enable the manipulation of outcomes through earnings management (Cabello & Pereira, 2015). This practice is a kind of accounting judgment managers use to alter accounting information, aiming to manipulate stakeholders' perceptions or even meet market expectations (Healy & Wahlen, 1999; Martinez, 2013; Schipper, 1989). For this research, earnings management is considered an aggressive practice that causes losses in informational quality (Agustia et al., 2020). In this study, the term aggressive accounting refers to the excessive practices of recognizing accounting transactions.

The normative context of accounting referred to in this research is based on the Focus Theory of Normative Conduct by Cialdini et al. (1990, 1991). This theory has two significant contributions: (1) there are two different types of norms: descriptive and injunctive. The first one (the norm of "what is") identifies what most people do in a given situation. In contrast, the second one (the norm of "what should be") highlights what people should do in a particular situation or even what is approved or disapproved by others in an organizational environment; (2) these norms, regardless of the kind, need to be activated, or made evident to the individual, to be effective.

Preparing financial statements is influenced by managers' biases, affecting what is reported (Bushman & Smith, 2001; Healy & Palepu, 2001). Thus, if managers have this discretionary power, they can also direct the process for greater compliance with accounting standards (Young, 2021). Therefore, it is relevant to analyze whether the opinions of these managers have the power to reduce earnings management by accountants. For this research, the opinion of the higher-up is considered, chosen from the perspective that leadership traits can impact the determination of accounting aggressiveness (Patelli & Pedrini, 2015).

To assist decision-makers in a better direction, behavioral economics has contributed by presenting nudges. A nudge, commonly referred to as a push, is defined by Thaler and Sustein (2008) as any aspect of the choice architecture that can direct people's behavior toward the best decision without changing financial incentives or removing the individual's freedom of choice. Sunstein (2014) emphasizes the use of social norms as nudges.

Research has already been developed using nudges to direct decision-makers, such as Gajewski et al. (2022), Mitchell and Cheung (2020), Pilaj (2015), and Walmsley et al. (2018). However, studies have not explored the relationship with earnings management, which becomes an opportunity. Assuming that accounting aggressiveness is detrimental to information quality and that nudges can help in accounting choices, it is relevant to explore this relationship. The following research problem was formulated: What are the effects of using nudges in reducing earnings management? Aiming to answer the proposed problem, the objective is to verify the effects of using nudges in reducing earnings management.

Research on accounting aggressiveness has used the methodology of experiments like Kelly and Murphy (2019) and Young (2021). Considering the relationship sought to be explored here, an experiment was used in this sense. In this research, nudges have two conditions (injunctive and descriptive) and a control condition for comparison. The choice of methodology allows exploring earnings management from another perspective, a more exploratory one and with less statistical analysis (Martinez, 2013).

This research contributes to expanding the literature on nudges, significantly expanding the context of accounting, which still needs to be explored. Similarly, it allows expanding research on earnings management from another perspective, which is through the accounting professional's behavioral bias. Once the usefulness of nudges in reducing earnings management is identified, nudges can be implemented in organizations, as their application is considered simple and with low-cost. As earnings management is reduced, the quality of accounting information rises, providing a more solid basis for decision-making by owners, investors, financial institutions and even regulatory entities.

2 THEORETICAL FRAMEWORK

2.1 Nudges

According to proponents Thaler and Sunstein (2008), a nudge is an intervention in the choice environment aimed at predictably directing people's behavior without significantly altering economic incentives while maintaining freedom of choice. It is also called a "gentle push" or "poke". Nudges are based on behavioral psychology and behavioral economics research and are currently used in several contexts, such as public policy, marketing, product design and technology.

Studies have been conducted using nudges. Gajewski et al. (2022) used nudges to encourage investors in the United States to choose Socially Responsible Investment (SRI) funds over traditional funds; Mitchell and Cheung (2020) aimed to reduce opportunistic fraud using nudges; Pilaj (2015) developed a conceptual framework to improve the effectiveness and encourage the use of SRI based on choice architecture; Walmsley et al. (2018) also used nudges to intervene in the choice architecture of a university campus supermarket in England.

Sunstein (2014) presents social norms as influential in forming nudges. Specifically, this research used social norm nudges to convey injunctive and descriptive norms from the top down (senior or hierarchical leader). The communication of these norms will show the entity's position on earnings management. It is important to note that these descriptive and injunctive nudges are aligned with the Focus Theory of Normative Conduct by Cialdini et al. (1990, 1991).

2.2 Earnings management

Given the variety of motivations for earnings management, some factors can be considered helpful in its reduction process, among them the use of systems for the proper application of norms aimed at detecting and restricting this aggressive practice (Böcking et al., 2015) and even the way social norms are exposed to decision-makers (Young, 2021). Surprisingly, despite the importance, few studies have been developed on monitoring mechanisms limiting or reducing aggressive reporting (Bhattacharya et al., 2022).

Starting from the initial assumption that accounting aggressiveness is detrimental to information quality, it is necessary to reduce earnings management practices. So, nudges of social norms can effectively measure this process. Thus, based on the fundamentals, the first hypothesis was formulated:

H_1: The level of earnings management by accounting professionals is lower in the nudge presence than in their absence.

Consistent with the Upper Echelons Theory, leadership traits can create an environment based on ethical positioning or operational management style, especially regarding accounting aggressiveness (Bishop et al., 2017; Patelli & Pedrini, 2015). There is evidence in the literature that the effect of organizational leadership impacts profit determination and, thus, accounting choices, such as the level of aggressiveness (Bamber et al., 2010; Bishop et al., 2017; Ge et al., 2011; Griffin et al., 2021; Ma et al., 2021).

As a form of communication with their subordinates, organizational leaders can use nudges to direct their behavior in the desired direction (Thaler & Sunstein, 2008). In parallel, the literature indicates the effectiveness of using social norms in accounting, including as a mechanism for reducing earnings management and controlling accounting practices (Kelly & Murphy, 2021; Tayler & Bloomfield, 2011; Young, 2021).

Moreover, considering the relevance of social norms in the organizational environment, since leaders can infer the appropriate behavior regarding accounting norms, injunctive nudges - emphasizing what the organizational leader expects about the behavior of their subordinates - can be effective measures in reducing reports that present high levels of earnings management (Sunstein, 2014; Young, 2021).

Injunctive nudges depend on a more elaborate cognitive process, which, in this case, is well aligned with the effects caused by the authority of the top-down tone (Hambrick & Mason, 1984; Cialdini, 2003; Young, 2021). Then, descriptive nudges issued by leaders - the leader communicating how it is usually done - would not make a difference in the level of earnings management, as with the absence of a nudge, since the leader has an authoritative figure, need to direct the behavior of those involved in the process more persuasively, and not descriptively. Therefore, the second and third hypotheses were formulated:

H_2: The level of earnings management by accounting professionals is lower in the an injunctive nudge presence issued by the leader than in its absence.

H_3: There is no difference in the level of earnings management by accounting professionals when the leader issues the descriptive nudge compared to the absence of a nudge.

3 METHOD

3.1 Experimental design and participant profile

A between-subject experiment was used. The analysis was made from a 2x1 factorial experiment, with two conditions for nudges (descriptive and injunctive) and one control condition, resulting in three groups. The profile of the participants was characterized by Brazilian accounting professionals duly registered with the professional council, who were involved in preparing financial statements, and who had superiors in the hierarchical structure of this process.

Data collection for the experiment was conducted through the Google Forms® platform, and the link was sent via the social network LinkedIn. Participant randomness was ensured through a multiple-choice question where the order changed with each new access to the link. The data collection instrument can be accessed through the link: https://docs.google.com/forms/d/13EhO6HTsryqYmaDY6euhRkMZE8ILKr8X8tYUgWC9N98/edit.

The ideal sample size was determined using G*Power 3.1.9 software, utilizing the F test (ANOVA) to evaluate three groups related to types of nudges. The level of significance was 5%. The results of this procedure indicated an ideal sample size (74 participants) that was more extensive than the size used, which was 40 participants.

The decision to maintain the sample at 40 participants was deliberate and based on this research's exploratory and pilot nature. The initial objective was to establish solid bases for more in-depth investigations, focusing on a specific public of active accountants. The sample choice considered not just the ideal number but also the search for valuable insights within the specific characteristics of the target group.

However, it is essential to recognize the limitations resulting from this choice. The restricted sample size may further limit the extent of the results to a broader population, and the sample's representativeness may need to capture the effect being investigated thoroughly.

A rigorous approach was used to ensure the reliability of the results. Trochim, Donnelly, and Arora (2016) explore the several validities. Internal validity was preserved through consistent procedures in participant selection, emphasizing the adequate definition of the target audience and the assurance of randomized participation. Each professional had the same chance to participate in each scenario only once. Efforts were made to ensure construct validity by correctly operationalizing the investigated variables, aligned with the theoretical fundamentals of earnings management and nudges.

Despite the sample size compromising the external validity regarding the generalization of findings, which is inherent in experimental approaches, the execution of the research design sought to reduce threats to operationalization, allowing control of the limitation resulting from the sample. Thus, the validity of the conclusions can be established through the global analysis of the experiment, where the instrument, data collection, participant selection, and analysis of the results proved adequate, revealing significant insights.

Based on the preceding, the results should be analyzed comprehensively, considering the entirety of the experiment. A careful assessment of the efficacy of the instrument used, the quality of data collection, the rigorous selection of participants, and the analysis of the results is recommended. The global interpretation of the study should highlight the strategies' relevance and significance and theoretical alignment of the results obtained. This approach will allow a more complete and reliable understanding of the conclusions reached in the context of the experiment.

The main project, which includes the investigation carried out in this first phase, was approved by the Ethics Committee of the Health Sciences Center at the Federal University of Paraíba - CCS/UFPB.

3.2 Measurement of variables

Table 1 illustrates that the study used a dependent variable, the level of earnings management and an independent variable, the types of nudges.

Table 1 – Research variables

Variable	Description	Metric	Source
Dependent variable			
Earnings management	The accounting record of the ADA is a proxy for earnings management.	The scenario of receivables adjustment focuses on the level of earnings management a 7-point scale, ranging from 1 to 7.	Adapted from DeZoort et al. (2003, 2006) and Santos and Cunha (2021, 2022)
Independent variables			
Nudge	1 - Control condition 2 - Descriptive nudge 3 - Injunctive nudge	1 - No nudge. 2 -A descriptive nudge in the form of a simplified message about social norms is issued by the hierarchial superior describing peers' behavior regarding accounting aggressiveness. 3 - Injunctive nudge in the form of a simplified message about social norms issued by the hierarchical superior guiding the expected behavior regarding accounting aggressiveness.	Sunstein (2014)

Nota: Allowance for Doubtful Acconts (ADA).

3.3 Experimental scenario

The experimental task involved decision-making about reducing the customer's receivable balance accounts. The three participant groups responded to this task. The case described Inspira Tecnologia S.A., which had a customer, Global, experiencing financial difficulties and thus could not meet its short-term obligations. Consequently, Inspira S.A. needed to make an accounting adjustment in the Allowance for Doubtful Accounts (ADA). Faced with the situation, the participant had to recommend or not the adjustment on a scale of 1 to 7, where one is "strongly do not recommend the adjustment" and seven is "strongly recommend the adjustment". It is noted that the accounting adjustment is a proxy for earnings management.

When recommending the adjustment, the descriptive and injunctive nudge groups received messages in a board displayed in the company. The messages for descriptive and injunctive nudges were respectively: "the board of directors in this company, as a standard, faithfully represent the performance of it in its financial statements" and "the board of directors expect that accounting practices that faithfully represent the performance of the Company in its financial statements will be used".

After completing the task, the participant answered a post-experiment questionnaire indicating their perception of the organizational social norms. Lastly, they provided their sociodemographic characteristics.

4 DISCUSSION AND ANALYSIS OF RESULTS

4.1 Descriptive analysis

Table 2 shows the profiles of the survey respondents. The sample consisted of 47.5% male and 52.5% female participants. Regarding the age of the participants, about 38% were between 26 and 30 years old. The average age of the participants was 33 years, with the minimum age being 23 years and the maximum 51 years. Approximately 48% of the sample had a specialization as their level of education, indicating that most participants have some specific training.

Table 2 - Demographic variables

		f_i	%
Gender	Male	19	47.5
	Female	21	52.5
		40	100
Age	20 to 25 years	4	10
	26 to 30 years	15	37.5
	31 to 35 years	12	30
	36 to 40 years	2	5
	41 to 45 years	5	12.5
	46 years or more	2	5
		40	100
Level of education	Undergraduate	13	32.5
	Specialization	19	47.5
	Masters	8	20
		40	100
Occupational position	Top management	6	15
	Middle management	6	15
	Operational management	28	70
		40	100
Company's size	Limited liability company (LLC)	24	60
	Publicly traded corporation (S/A)	14	35
	Privately held corporation (S/A)	2	5
		40	100
Hierarchical levels	1 to 4	35	87.5
	5 to 8	2	5
	9 or more	3	7.5
		40	100
Time working in the accounting field	Up to 1 year	5	12.5
	1 to 3 years	8	20
	4 to 10 years	19	47.5
	More than 10 years	8	20
		40	100
Time working in the current company	Up to 1 year	10	25
	1 to 3 years	12	30
	4 to 10 years	12	30
	More than 10 years	6	15
		40	100

Regarding the demographic characteristics of the respondents' current company, the majority position held was operational management, representing 60% of respondents. As for the company's size, it was observed that 60% of the respondents worked in Limited Liability Companies (LLC). Regarding hierarchical levels, approximately 88% of the respondents have between 1 and 4 hierarchical levels.

Concerning the time working in the accounting field, about 48% of the respondents have between 4 and 10 years of experience. The average length of time participants had been working was eight years. As for the time working at the current company, the sample was quite diverse, with the groups of 1 to 3 years and 4 to 10 years being the most predominant, representing 30%.

For analysis purposes, the characteristics of the accountants can be considered similar to the study by Kelly and Murphy (2021) since most participants were female, and the predominant age group was between 30 and 39 years. In the authors' research, most analyzed companies were also from the private sector, with participants having six or more years of professional experience. The similarity of the professional profile analyzed here with the previous study provides greater robustness in testing the effectiveness of nudges, given the current, still nascent, research stage on using this tool in accounting.

After the descriptive statistics of the participants, the analysis continued with a more specific examination of the variables of interest. Table 3 shows the composition of the experimental groups, the accountants. Analyzing Table 3, it is possible to observe that participants who received the injunctive nudge condition showed a higher level of recommendation for the adjustment registration, indicating a lower level of earnings management compared to participants from the control and descriptive nudge groups. It is also noticeable that for the injunctive nudge group, the recommendation or not of the accounting adjustment varied between 6 and 7, indicating the recommendation of the total value of the registration. Conversely, in the control and descriptive nudge conditions, the level of recommendation varied from making no registration (1) to making the total registration (7).

Table 3 – Distribution of earnings management level by experimental group

	Group	Number	%	Earnings management*	Minimum	Maximum	Standard deviation
1	Control	12	30	5.17	1	7	2.12
2	Descriptive nudge	16	40	5.94	1	7	1.44
3	Injunctive nudge	12	30	6.67	6	7	0.49
	Total	40	100	5.93	1	7	1.58

Note: * The recommendation for accounting adjustment registration of the Allowance for Doubtful Accounts measured on a scale is a proxy for earnings management, indicating that the higher (lower) the recommendation, the lower (higher) the earnings management.

Table 4 describes the Analysis of Variance (ANOVA) test for the characteristics of the accounting professional concerning the level of earnings management. This analysis aimed to determine whether the accountants' personal characteristics influenced their accounting judgment level or not. To this end, characteristics such as gender, age, highest completed qualification, years of experience in the accounting area and at the current company, occupational position, company size, and the number of hierarchical levels between the accountant and their primary superior were analyzed.

Table 4 - ANOVA test for accountant characteristics and earnings management

Earnings management	F Statistic	Significance
Gender	1.79	0.17
Age	1.00	0.37
Completed qualification	0.10	0.96
Time working in the accounting field	0.85	0.60
Time working in the current company	0.28	0.44
Occupational position	0.68	0.57
Size of the company	0.67	0.58
Hierarchical levels	2.14	0.11

The results suggested by the analyzed sample are that the personal and professional characteristics of the accountants were not determinants of the level of earnings management. Such preliminary findings open the door to the potential utility of nudges in reducing this aggressive practice, that is, in other contexts, as Leal et al. (2022) suggested. The authors emphasize that the intervention in choices, in this case, the levels of earnings management, depends on the technique and domain of the intervention.

4.2 Hypothesis tests

Aiming to test the research hypotheses, after verifying the distribution of the accounting record level, the chi-square test was performed to analyze the association between the level of recommendation for the accounting registration of the ADA, a proxy for earnings management, and the nudge conditions. The test showed a statistically significant result at the 5% level (p-value 0.03), thus enabling the performance of multiple correspondence analysis. The perceptual map of this association can be viewed in Figure 1.

The map in Figure 1 shows that the highest level of recommendation for the accounting registration of the Allowance for Doubtful Accounts (7 - Strongly recommend the registration) is associated with the injunctive nudges condition. Notably, the descriptive nudge condition showed an association with a lower level of earnings management (6 – Recommendation of registration). The control condition is associated with lower recommendation levels for the accounting adjustment, i.e., higher earnings management, especially when compared to the presence of injunctive or descriptive nudges. This result provides preliminary support that nudges affect the decision-making process of accounting professionals.

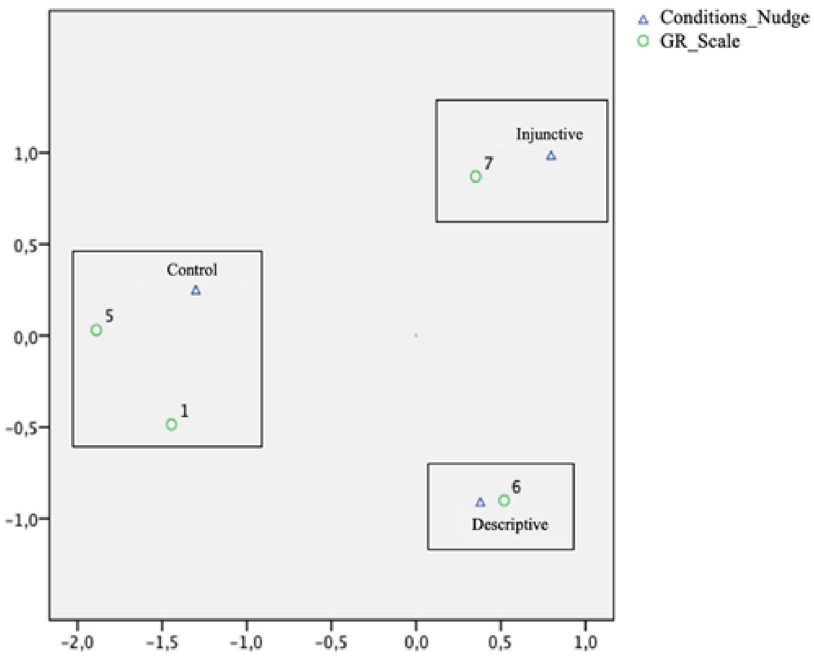

Figure 1. Perceptual map of the association among nudges and earnings management

Note: Nudge conditions = categorical variable of the experimental groups, where 1 is the control group, 2 is the descriptive nudge group, and 3 is the injunctive nudge group.

GR_scale = a proxy for earnings management based on the recommendation for accounting adjustment measured on a scale (1 to 7), indicating that the higher (lower) the recommendation, the lower (higher) the earnings management.

Number of observations = 40 participants (control: 12; descriptive nudge: 16; and injunctive nudge: 12).

Subsequently, ANOVA and the Tukey – Honestly Significant Difference (HSD) test were used for multiple means comparisons, as shown in Table 5. Panel A presents ANOVA results for the nudge conditions and earnings management, while Panel B shows the Tukey test results. Hypothesis 1 suggests that the level of earnings management by accounting professionals is lower in the presence than in the absence of nudges. According to Table 5 - Panel A, there is a difference between the presence of nudges and their absence in explaining the lower level of earnings management. Thus, this result suggests support for Hypothesis 1.

Hypothesis 2 tests that the level of earnings management by accounting professionals is lower in the presence than in the absence of an injunctive nudge issued by the leader. Analyzing Table 5 - Panel B, it is evident that the comparison between group 3 (injunctive nudges) and group 1 (control condition) is significant at the 5% level in explaining the higher level of recommendation for adjustment registration. This result suggests that injunctive nudges explain a lower level of earnings management than the absence of nudges, supporting Hypothesis 2.

Further analyzing Table 5 – Panel B, it is observed that there was no difference in the control group x descriptive and the descriptive x injunctive. This finding supports Hypothesis 3, which assumes there is no difference in the level of earnings management by accounting professionals when the leader issues the descriptive nudge compared to the absence of it. Based on the averages, even though they did not reach statistical significance, it is noticeable the group that received the injunctive nudge demonstrated a higher level of recommendation for the adjustment registration (i.e., a lower level of earnings management) compared to the group that received the descriptive nudge (Group 3 x Group 2), and the group that received the descriptive nudge showed a stronger recommendation compared to the control group (Group 2 x Group 1).

Tabela 5 - Hypothesis testing

Panel A: Main effects				
ANOVA	df	Mean square	F	p-value
Control x leader nudge	2	6.75	3.00	0.05**
Error	37	2.25		
Panel C: Simple effects				
Tukey test	Mean difference	Standard error	t	p-value
Group 2 x Group 1	0.77	0.57	1.35	0.38
Group 3 x Group 1	1.50	0.61	2.45	0.05**
Group 3 x Group 2	0.73	0.57	1.27	0.42

Notes: ***, ** and * represent significance levels of 1%, 5%, and 10%, respectively. Nudge = categorical variable of the experimental groups, 1 is the control group, 2 the descriptive nudge group and 3 the injunctive nudge group.

The dependent variable of earnings management = proxy for earnings management based on the recommendation for accounting adjustment measured on a scale (1 to 7), indicating that the higher (lower) the recommendation, the lower (higher) the earnings management.

The results indicate that social norm nudges can be effective in leader communication to direct people's behavior towards the desired direction (Thaler & Sustein, 2008). Empirically, Kelly and Murphy (2021), Tayler and Bloomfield (2011), and Young (2021) have confirmed the efficacy of social standards as a mechanism for reducing earnings management and controlling accounting practices.

This finding aligns with the characteristic of injunctive nudges, which can naturally be considered a powerful tool inferring how others are expected to behave, possessing the component of persuasion to achieve the intended goal (Cialdini, 2003). Therefore, using injunctive nudges can help influence the other participants' behavior in the process, including reducing reports that present high levels of earnings management (Sustein, 2014; Young, 2021).

The descriptive nudge result issued by the leader aligns with its characteristic, as a descriptive norm communicates the typical or normal behavior within the organization, i.e., what most people do (Cialdini et al., 1991). Thus, there is no peer-matching effect, as those analyzed in the research are subordinates. Hence, due to the need for authority in the leader's tone, it is natural that the descriptive nudge did not significantly affect the level of earnings management (Cialdini, 2003; Hambrick & Mason, 1984; Young, 2021).

The results suggest that nudges affect the accounting professionals' decision-making process reducing earnings management. Among the analyzed conditions, it is evident that the injunctive nudge was relevant in the decision-making process, showing the highest average recommendation for the accounting adjustment registration, i.e., a lower level of earnings management.

Thus, the findings indicate the principles for exploring the tone at the top from the Upper Echelons Theory can create an organizational environment for communication, as a director of employees' decision-making (Pickerd et al., 2015; Schaubroeck et al., 2012). Therefore, injunctive nudges - the organizational leader emphasizing what they expect about their subordinates' behavior - can be used by companies to reduce earnings management in reports (Sunstein, 2014; Young, 2020).

Considering that the decision-maker has interests in how information is disclosed, the results are supported by Agency Theory concerning the possible conflicts of interest that can be generated (Jensen & Meckling, 1976). These interests can encourage earnings management, which, in turn, can be explained by the accounting

Choices Theory (Watts & Zimmerman, 1986, 1990), as the same event received different recommendation levels. Thus, their exploration is valid, assuming that earnings management is detrimental to the quality of accounting information and that social norm nudges have proven helpful in the reduction process.

4.3 Complementary analysis

The findings support the effect of nudges on earnings management and further explanations about this association were sought. So, the organizational social norms identified by the respondent as a possible explanation of the nudge effect on earnings management were analyzed.

A continuous variable (1 to 7) for injunctive social norms was created from statements 1 and 2 of the Organizational Social Norms contained in the data collection instrument - (1) The superiors have made it clear that the use of accounting practices that do not faithfully represent the company's performance will not be tolerated; and (2) The superiors have informed that if any involvement with accounting practices do not faithfully represent the company's performance is found out, the employee will be promptly reprimanded.

Similarly, statements 3 and 4 were responsible for capturing descriptive norms - (3) The superiors of the company typically use accounting practices that faithfully represent the company's performance, and (4) The superiors of this company do not usually use accounting practices that do not faithfully represent the company's performance to meet the top management's expectations.

Structural Equation Modeling (SEM) was used to verify the possible mediating effects of social norms in the relationship among nudges and earnings management, as seen in Figures 2 and 3, respectively. The model quality was confirmed by the indices: Root-Mean-Square Error of Approximation (RMSEA) below 0.06, Comparative Fit Index (CFI) above 0.95, and Standardized Root Mean Square Residual (SRMR) below 0.08 (Hu & Bentler, 1999).

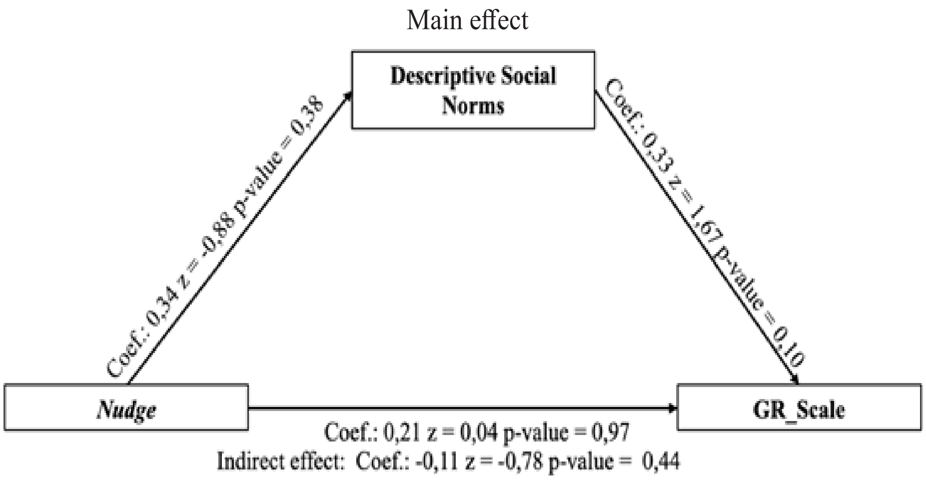

Figure 2. Mediation of descriptive social norms on nudges and earnings management

Notes. ***, ** and * represent significance levels of 1%, 5%, and 10%, respectively. Nudges = dummy variable for nudge conditions, with 1 being descriptive nudge and 0 being injunctive nudge.

Descriptive social norms = variable indicating the descriptive social norms perceived by the accountant, ranging from 1 to 7 (minimum and maximum level, respectively).

GR_scale = a proxy for earnings management based on the recommendation for accounting adjustment measured on a scale (1 to 7), indicating that the higher (lower) the recommendation, the lower (higher) the earnings management.

As a result, no mediation effect was observed in this relationship, suggesting that nudges are not influencing the descriptive and injunctive social norms. A possible explanation for this result is that the social norms conveyed by nudges may require a more respondent-friendly approach, if in terms of how the nudge is presented or the content of the transmitted message. This could encourage the respondent to feel more integrated into the process and thus make decisions aligned with the intended objectives of the nudge.

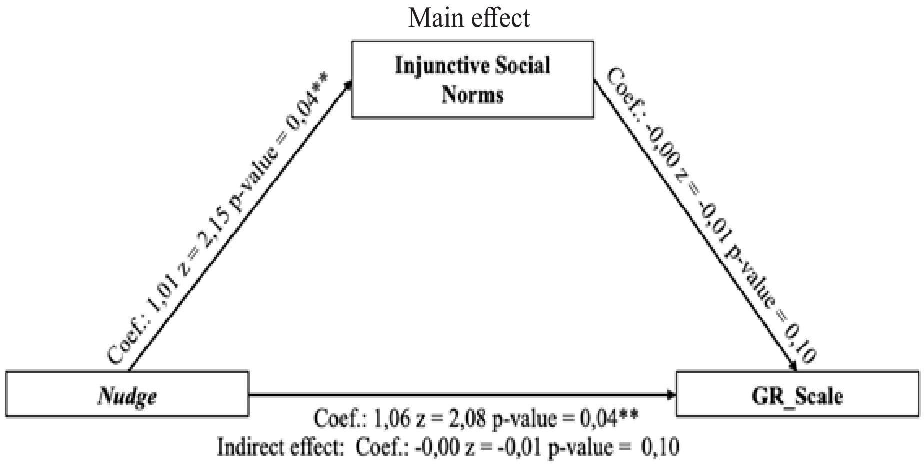

Figure 3. Mediation of injunctive social norms on nudges and earnings management

Notes: ***, ** and * represent significance levels of 1%, 5%, and 10%, respectively.

Nudges = dummy variable for the conditions of the nudge, with 1 being injunctive nudge and 0 being descriptive nudge.

Injunctive social norms = variable indicating the injunctive social norms perceived by the accountant, ranging between 1 and 7 (minimum and maximum level, respectively).

GR_scale = a proxy for earnings management based on the recommendation for accounting adjustment measured on a scale (1 to 7), indicating that the higher (lower) the recommendation, the lower (higher) the earnings management.

Number of observations = 40 participants (control: 12; descriptive nudge: 16; and injunctive nudge: 12).

In general, the complementary analyses do not suggest effects on the relationship among nudges and earnings management. Thus, despite statistical indications that nudges (injunctive) alter the choice architecture in the decision-making process of accounting professionals, reducing earnings management, the activation of social norms did not mediate this effect.

5 CONCLUSION

This research aimed to verify the effects of using nudges in reducing earnings management. Generally, it obtained three main findings, demonstrating support for the developed hypotheses. First, the level of earnings management by accounting professionals is lower in the presence than in the absence of nudges; second, the level of earnings management by accounting professionals is lower in the presence than in the absence of an injunctive nudge issued by the leader; and third, that there is no difference in the level of earnings management by accounting professionals when the descriptive nudge is issued by the leader, compared to the absence of a nudge.

This study provides important implications about the results for theory and accounting practice. It contributes to the literature by demonstrating that nudges can be used to reduce earnings management, potentially constituting a quality characteristic of accounting information. It also allows for exploring the theoretical aspects of the decision-making process of accounting professionals, considering all the subjectivity inherent in accounting standards.

Practically, the findings here are helpful to organizations, as they can be used to direct the behavior of accounting professionals towards less aggressive reporting. The nudges used in this study can be easily implemented in the organizational environment, as they are simple, easy to implement and low-cost. Implementing nudges can be helpful for managers, owners, investors, financial institutions and even regulatory entities, as they can guide those involved in preparing financial statements towards maintaining informational quality.

The main limitation of this study stems from the sample size, as it restricts the generalization of the findings to a broader population, a characteristic inherent in the experimental approach. The limited number of participants in this research exacerbated this limitation. A more detailed analysis of these limitations requires recognizing that the sample's representativeness may be affected, especially concerning the statistical significance identified in the main effects analysis.

Future studies are proposed to expand the sample, incorporating different professional profiles and organizational contexts to overcome this limitation. Such an approach will allow a more comprehensive analysis of the nudge effects on earnings management, contributing to greater external validity of the study. It is also suggested to continue analyzing both the tone at the top and the tone of peers, where descriptive nudges may prove significant in explaining the nudge effects on earnings management. Testing different forms of nudges to capture the true effect of the form and message content is also enjoyable.

REFERENCES

Agustia, D., Muhammad, N. P. A., & Permatasari, Y. (2020). Earnings management, business strategy, and bankruptcy risk: evidence from Indonesia. *Heliyon*, 6(2), e03317. https://doi.org/10.1016/j.heliyon.2020.e03317

Bamber, L. S., Jiang, J., & Wang, I. Y. (2010). What's my style? The influence of top managers on voluntary corporate financial disclosure. *The Accounting Review*, 85(4), 1131-1162. https://doi.org/10.2308/accr.2010.85.4.1131

Bhattacharya, N., Christensen, T. E., Liao, Q., & Ouyang, B. (2022). Can short sellers constrain aggressive non-GAAP reporting? *Review of Accounting Studies*, 1-50. https://doi.org/10.1007/s11142-021-09621-9

Bishop, C. C., DeZoort, F. T., & Hermanson, D. R. (2017). The effect of CEO social influence pressure and CFO accounting experience on CFO financial reporting decisions. *Auditing: A Journal of Practice & Theory*, 36(1), 21-41. https://doi.org/10.2308/ajpt-51507

Böcking, H. J., Gros, M., & Worret, D. (2015). Enforcement of accounting standards: how effective is the German two-tier system in detecting earnings management? *Review of Managerial Science*, 9, 431-485. https://doi.org/10.1007/s11846-014-0159-z

Bushman, R. M., & Smith, A. J. (2001). Financial accounting information and corporate governance. *Journal of accounting and Economics*, 32(1-3), 237-333. https://doi.org/10.1016/S0165-4101(01)00027-1

Cabello, O. G., & Pereira, C. A. (2015). Efeitos das práticas de tributação do lucro na effective tax rate (ETR): uma abordagem da teoria das escolhas contábeis. *Advances in Scientific and Applied Accounting*, 356-373. http://dx.doi.org/10.14392/asaa.2015080305

Cialdini, R. B. (2003). Crafting normative messages to protect the environment. *Current Directions in Psychological Science*, 12(4), 105-109. https://doi.org/10.1111/1467-8721.01242

Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. In *Advances in Experimental Social Psychology*, 24, 201-234. https://doi.org/10.1016/S0065-2601(08)60330-5

Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, 58(6), 1015.

DeZoort, F. T., Hermanson, D. R., & Houston, R. W. (2003). Audit committee support for auditors: The effects of materiality justification and accounting precision. *Journal of Accounting and Public Policy*, 22(2), 175-199. https://doi.org/10.1016/S0278-4254(03)00007-3

DeZoort, T., Harrison, P., & Taylor, M. (2006). Accountability and auditors' materiality judgments: The effects of differential pressure strength on conservatism, variability, and effort. *Accounting, Organizations and Society*, 31(4-5), 373-390. https://doi.org/10.1016/j.aos.2005.09.001

Dichev, I. D. (2020). Fifty years of capital markets research in accounting: Achievements so far and opportunities ahead. *China Journal of Accounting Research*, 13(3), 237-249. https://doi.org/10.1016/j.cjar.2020.07.005

Gajewski, J. F., Heimann, M., & Meunier, L. (2022). Nudges in SRI: the power of the default option. *Journal of Business Ethics*, 1-20. https://doi.org/10.1007/s10551-020-04731-x

Ge, W., Matsumoto, D., & Zhang, J. L. (2011). Do CFOs have style? An empirical investigation of the effect of individual CFOs on accounting practices. *Contemporary Accounting Research*, 28(4), 1141-1179. https://doi.org/10.1111/j.1911-3846.2011.01097.x

Griffin, P. A., Hong, H. A., Liu, Y., & Ryou, J. W. (2021). The dark side of CEO social capital: Evidence from real earnings management and future operating performance. *Journal of Corporate Finance*, 68, 101920. https://doi.org/10.1016/j.jcorpfin.2021.101920

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206.

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31(1-3), 405-440. https://doi.org/10.1016/S0165-4101(01)00018-0

Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4), 365-383. http://dx.doi.org/10.2139/ssrn.156445

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.

Kelly, K., & Murphy, P. R. (2021). Reducing accounting aggressiveness with general ethical norms and decision structure. *Journal of Business Ethics*, 170, 97-113. https://doi.org/10.1007/s10551-019-04290-w

Leal, C. C., Branco-Illodo, I., Oliveira, B. M., & Esteban-Salvador, L. (2022). Nudging and Choice Architecture: Perspectives and Challenges. *Revista de Administração Contemporânea*, 26. https://doi.org/10.1590/1982-7849rac2022220098.en

Ma, Z., Wang, R., & Zhou, K. (2021). Generalist CEOs and audit pricing. *Auditing: A Journal of Practice & Theory*, 40(4), 123-147. https://doi.org/10.2308/AJPT-18-086

Martinez, A. L. (2013). Gerenciamento de resultados no Brasil: um survey da literatura. *BBR-Brazilian Business Review*, 10(4), 1-31.

Mitchell, T., & Cheung, B. (2020). Using behavioural science to reduce opportunistic insurance fraud. *Applied Marketing Analytics*, 5(4), 294-303.

Patelli, L., & Pedrini, M. (2015). Is tone at the top associated with financial reporting aggressiveness? *Journal of Business Ethics*, 126, 3-19. https://doi.org/10.1007/s10551-013-1994-6

Pickerd, J. S., Summers, S. L., & Wood, D. A. (2015). An examination of how entry-level staff auditors respond to tone at the top vis-à-vis tone at the bottom. *Behavioral Research in Accounting*, 27(1), 79-98. https://doi.org/10.2308/bria-50918

Pilaj, H. (2015). The choice architecture of sustainable and responsible investment: Nudging investors toward ethical decision-making. *Journal of Business Ethics*, 140, 743-753. https://doi.org/10.1007/s10551-015-2877-9

Santos, C. A. D., & Cunha, P. R. D. (2021). Efeito da Confiança entre a Pressão de Tempo e Complexidade no Julgamento e Tomada de Decisão em Auditoria. *Revista de Administração Contemporânea*, 25(5), e-200037. https://doi.org/10.1590/1982-7849rac2021200037.por

Santos, C., & Cunha, P. (2022). Influence of trust, time pressure and complexity factors in judgment and decision-making in auditing. *BBR-Brazilian Business Review*, 18, 605-623. https://doi.org/10.15728/bbr.2021.18.6.1

Schaubroeck, J. M., Hannah, S. T., Avolio, B. J., Kozlowski, S. W., Lord, R. G., Treviño, L. K., & Peng, A. C. (2012). Embedding ethical leadership within and across organization levels. *Academy of Management Journal*, 55(5), 1053-1078. https://doi.org/10.5465/amj.2011.0064

Schipper, K. (1989). Earnings management. *Accounting Horizons*, 3(4), 91.

Silva, D. M., Martins, V. A., & Lemes, S. (2016). Escolhas Contábeis: reflexões para a pesquisa. *Revista Contemporânea de Contabilidade*, 13(29), 129-15. http://dx.doi.org/10.5007/2175-8069.2016v13n29p129

Sunstein, C. R. (2014). Nudging: a very short guide. *Journal of Consumer Policy*, 37, 583-588. https://doi.org/10.1007/s10603-014-9273-1

Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Penguin.

Tayler, W. B., & Bloomfield, R. J. (2011). Norms, conformity, and controls. *Journal of Accounting Research*, 49(3), 753-790. https://doi.org/10.1111/j.1475-679X.2011.00398.x

Trochim, W. M., Donnelly, J. P., & Arora, K. (2016). *Research methods: The essential knowledge base*. Cengage learning.

Walmsley, R., Jenkinson, D., Saunders, I., Howard, T., & Oyebode, O. (2018). Choice architecture modifies fruit and vegetable purchasing in a university campus grocery store: time series modelling of a natural experiment.

BMC Public Health, 18(1), 1-9. https://doi.org/10.1186/s12889-018-6063-8

Watts, R. L., & Zimmerman, J. L. (1986). *Positive accounting theory*.

Watts, R. L., & Zimmerman, J. L. (1990). Positive accounting theory: a ten-year perspective. *Accounting Review*, 131-156.

Young, D. (2021). How Social Norms and Social Identification Constrain Aggressive Reporting Behavior. *The Accounting Review*, 96(3), 449-478. https://doi.org/10.2308/TAR-2015-0417

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