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Editor's Note

Dear Readers,

Issue number 2, volume 26, of the second quarter of 2025 of the Revista Mineira de Contabilidade (RMC), in Portuguese and in English, begins with an editorial written by Laura Brandão Costa and Marcelo Tavares called “Does cost behavior influence the accuracy of return forecasts?”. It presents arguments that support the idea that asymmetric cost behavior can impact returns and their future predictability. It also supports the thesis that cost stickiness can also affect the accuracy and assertiveness of investment decisions within entities, from the perspective of external users of accounting information, who do not possess strategic information related to costs and volume.

The article “Effect of Financial Education and Attitudes Towards Money on the Propensity to Indebtedness”, written by Jéssica Merco do Nascimento e Silva, Stephan Klaus Bubeck, and Moacir Manoel Rodrigues Júnior, aims to analyze the effect of financial education and attitudes towards money on the propensity to take on debt. The article was conducted with a sample of 318 Business Administration and Accounting postgraduate students in Brazil. The following study is called “Political Skills in Accounting Students: Differences Based on Exposure to the Business Communication Course”. Its authors are Felipe Stainsack do Rosário, João Victor Pupo dos Santos, Ricardo Adriano Antonelli, and Alison Martins Meurer. This article aims to identify possible differences in the political skills of Accounting students based on their exposure to the Business Communication course, in order to understand how the dimensions of Political Skills are associated.

The next article, “Earnings management by discretionary accruals in Brazilian states”, aimed to identify the behavior of discretionary accruals in Brazilian states and in the Federal District. Its authors are Pedro Henrique Jesus Oliveira and Antônio Carlos Brunozi Júnior.

The study “Once upon a time...The constitution of Nubank’s Intellectual Capital through values and customer-centric strategies”, by Giovana Toninato Fontes and José Luiz Borsatto Junior, analyzed how Nubank builds Intellectual Capital (IC) through a disruptive, customer-centric business narrative. The work by Juliette de Castro Tavares, Ana Maiara Rodrigues Pereira and Juliano Lima Soares is called “Management Control Systems and Innovation Management: an investigation in Cooperative Organizations” and it aims to identify whether each of the control systems in Simons’s framework (beliefs, limits, diagnostic and interactive) relates differently to the different types of innovation, incremental and radical, in the context of cooperatives.

The following article, “Enterprise Risk Management and Quality of Accounting Information in Latin America”, was developed by Wagner Dantas de Souza Junior, Ricardo Artur Spezia, Marcia Zanievicz da Silva, and Tarcísio Pedro da Silva. It investigates the impact of ERM adoption on the quality of accounting information among 283 publicly traded companies in Latin America from 2010 to 2019. Finally, Paloma Rossany Maciel Rodrigues Oliveira reviewed Brian Gibbons’s research, “The Financially Material Effects of Mandatory Nonfinancial Disclosure”, published in the Journal of Accounting Research in 2024. This research explores the financial impacts of mandatory adoption of nonfinancial disclosure standards focused on environmental and social (E&S) aspects.

We congratulate the authors whose articles were approved and whose research is published in RMC, contributing to the advancement of knowledge in the field of Accounting. We thank the authors for trusting in us, for submitting their articles to RMC and believing in the quality of its review process, and we thank the reviewers for their dedication to this valuable work.

We wish you all an enjoyable read!

Editorial

DOES COST BEHAVIOR INFLUENCE THE ACCURACY OF RETURN FORECASTS?

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The traditional accounting perspective posits that an entity's costs adjust proportionally to variations in volume, thereby tracking the fluctuations in operational levels (Banker; Ciftci & Mashruwala, 2008). Conversely, uncertainties related to future demand, managerial decisions concerning resource allocation, and the contemporary macroeconomic environment may no longer be adequately accounted for under this framework. This situation underscores the necessity for an alternative conceptualization of cost behavior to more accurately elucidate cost dynamics, taking into consideration their implications for the managerial requirements of organizations (Novák; Dvorský; Popesko & Strouhal, 2017).

It is widely recognized, both within academic circles and in practical contexts, that there exists a broadly disseminated consensus regarding the linear behavior of costs in relation to volume. Nevertheless, for over two decades, an alternative interpretation has been under discussion, which posits that costs exhibit asymmetric dynamics in response to variations in operational activity (Anderson; Banker & Janakiraman, 2003). This behavior, termed the cost stickiness phenomenon, is underpinned by the Sticky Cost Theory, which asserts that costs respond asymmetrically to changes in operational levels, whether increases or decreases.

The operational activities of entities are influenced by the economic context, uncertainties regarding future demand, as well as investment deliberations by managers. Such factors result in managerial decisions that give rise to adjustment costs, which stem from the occurrence of cost reductions or additions that do not necessarily change proportionally with fluctuations in operational volume (Subramaniam & Watson, 2016). It can be inferred, therefore, that the cost stickiness phenomenon results from adjustments implemented by entities, which prevent costs from tracking volume variations proportionally, implying elasticity (asymmetry) in cost behavior.

Costs are understood to comprise variable and fixed components. In this regard, Kim & Prather-Kinsey (2010) assert that sales revenues and expenses evolve at different rates. Considering that cost information is internal and primarily based on strategic and managerial arguments, external users do not have access to it. For future projections and estimates, investors, for instance, use equal rates for revenues and expenses, which leads to errors in forecasts. Anderson et al. (2003) argue that fixed costs do not respond immediately to a reduction in operational volume, thereby causing cost stickiness.

This text aims to present arguments supporting the view that the asymmetric behavior of costs can impact returns and their future predictability. Furthermore, it posits the thesis that cost stickiness may also affect the accuracy and reliability of investment decisions within entities, from the perspective of external users of accounting information who lack access to strategic information related to costs and volume.

There is a well-established understanding in the literature that cost stickiness manifests, among other factors, due to managerial decisions wherein expenditures are incurred or eliminated based on expectations of demand for the entities (Ibrahim; Ali & Aboelkheir, 2022). These discretionary costs are more flexible and, therefore, dependent on return expectations for the entities (Medeiros; Costa; Silva, 2005). Much of this asymmetry can be explained by determining factors such as the utilization of productive capacity, empire building (managers' tendency to expand a firm beyond its optimal size), earnings targets, sales forecasting, and risk management (Tseng; Zhou; Gordon & Loeb, 2022).

In this context, cost forecasting is a fundamental part of profit forecasting (Weiss, 2010). However, investors, as external users of various entities, rely on published financial statements, and their lack of understanding regarding cost behavior can lead to judgment errors (Novák et al., 2017).

This situation is theoretically supported. Signaling Theory addresses information asymmetry between two parties. The theory posits that a signaling entity, possessing privileged information, makes it available in an environment with multiple receivers. These receivers, in turn, will only have access to the information if it is effectively signaled.

Signals are private pieces of information, which may be positive or negative, serving as transmitters of organizational attributes. However, for information to be considered a signal, it must be perceived by the receivers; for this to occur, the signaling party must demonstrate reliability so as to establish credible trustworthiness. Signaling to the market aims to reduce informational asymmetry (Conelly; Certo; Ireland & Reutzel, 2011).

From the perspective of Signaling Theory, it is understood that cost stickiness could be signaled by entities that publish financial statements to the capital market environment. Thus, receivers, from the investors' viewpoint, could incorporate it into their interpretations, analyses of financial statements, and return estimates, particularly in investment decisions. It is assumed that information has the potential to influence investment decisions. It is from this standpoint that this paper argues that cost stickiness should be signaled by entities to the capital market, thereby enabling interested investors to make more accurate and precise return forecasts, enhancing public financial information.

Brazil ranks among countries with emerging economies. In this context, there is a clear tendency for a large volume of capital to be traded (Ghysels; Plazzi & Valkanov, 2016). Given this, it is considered that entities operating in the Brazilian capital market are optimistic regarding future demand expectations and, therefore, are willing to incur new costs under the premise of anticipated increases in future sales (Costa, 2025).

When there is a willingness to assume new expenses beyond those already incurred, adjustment costs arise, which lead to cost asymmetry. In the case of more optimistic entities, the asymmetry is sticky, that is, the magnitude of cost increases associated with growth in operational activity exceeds the magnitude of cost reductions accompanying a decline in volume. This occurs because there are fixed components in the cost structure that do not promptly follow fluctuations in sales revenue.

Given the volume of capital traded in the Brazilian capital market, it is understood that entities are optimistic and prone to incur new costs based on positive future expectations. In this context, investors interested in the financial information of these entities—seek analyses of elements that indicate forecasts of returns on investments. However, these users may lack knowledge regarding the asymmetric behavior of costs and how such behavior may impact predictability (Costa, 2025).

It has been demonstrated that cost stickiness manifests both in its presence and magnitude, with the latter indicating the extent of fixed costs in an entity's structure. Anderson et al.'s (2003) model posits that the cost behavior to be estimated is the dependent variable, functioning as a response to changes in operational activity. Levels of asymmetry are identified by summing the estimated coefficients of the variables representing increases in sales revenue from the prior to the current period, and the variable identifying entities that experienced revenue declines between these periods. Therefore, using only historical financial information, sales revenue can serve as a proxy for operational volume, enabling verification of cost asymmetry (Costa, 2025).

Another important point is that investors focus on returns on investments. It is common for the analysis of financial statements to use current growth and profitability to assess future values. In this regard, Fairfield and Yohn (2001) argue that since financial statement analysis also aims to forecast future performance, disaggregating elements can improve profitability forecasts.

The DuPont analysis can be developed using accounting variables disclosed by entities. Fairfield and Yohn (2001) state that return on net operating assets (RNOA) includes financial assets and excludes operating liabilities from its base, making it similar to return on invested capital and a relevant indicator for investor analysis. RNOA is decomposed into asset turnover and profit margin, providing insights into growth in operating assets and the sales generated by these assets within organizations.

From the perspective of interpreting operating profitability, this decomposition enhances profitability forecasts because changes in asset turnover predict future changes in RNOA, proving useful in these estimates. The RNOA forecasting model treats RNOA as the dependent variable, with changes in asset turnover and profit margin as predictors (Penman & Zhang, 2002). However, based on Fairfield and Yohn's (2001) suggestion that further research should employ current financial statement information to improve future profitability forecasts, Costa (2025) incorporated cost stickiness variables into the RNOA predictability model to examine whether asymmetric cost behavior is associated with return forecasts.

It is argued that accounting reports disclosed to the market do not signal the asymmetric dynamics of costs. Therefore, to prevent misinterpretation or incomplete understanding of an entity's return persistence, forecasting errors, and biased investment decisions, there is the possibility of employing a model that considers cost asymmetry in forecasting returns on operating assets (Costa, 2025).

There is consensus that cost asymmetry exists among entities in the Brazilian capital market (Medeiros; Costa & Silva, 2005; Pereira & Tavares, 2020; Costa, 2025). Consequently, it was found that cost stickiness, both in presence and magnitude, is a phenomenon that negatively influences the prediction of future returns, with higher asymmetry levels associated with lower RNOA. Therefore, it is argued that the cost structure of publicly traded entities in Brazil likely includes significant fixed cost components. This results from new expenditures made in response to managers' optimistic expectations, which due to cost elasticity, lead to asymmetric behavior and, consequently, lower future RNOA values, negatively impacting forecasts (Costa, 2025).

On the other hand, although it is known that cost stickiness may be associated with lower future returns, models that incorporate this phenomenon in forecasts demonstrate greater precision. Weiss (2010) argues that reduced forecast errors imply higher accuracy, and that cost asymmetry serves as a proxy for more volatile earnings. It is therefore considered that, despite cost asymmetry signaling lower returns, its inclusion in forecasting models allows for more accurate estimates.

Thus, the model forecasting future returns that incorporates cost behavior incrementally enhances investment analyses, as it encompasses operational volume fluctuations and signals the incurrence of new costs by managers in response to optimistic market expectations.

The context described above indicates the fundamental importance of communicating to the market the potential occurrence of cost stickiness in publicly traded Brazilian entities. Accordingly, the following theoretical and practical implications concerning cost accounting and financial statement analysis are presented:

- 1) enhancement of the usefulness of financial statement analysis for estimating organizational growth: The literature shows that profit margin, asset turnover, and cost stickiness variables are associated with return forecasts (Penman & Zhang, 2002; Costa, 2025). It is therefore argued that the use of this information by the market would signal to investors the return on invested capital in the entity, given that the capital market environment independently controls the production and use of information. Thus, ignorance about cost behavior leads to forecasting errors, hindering new investments. The inclusion of such additional information, involving financial data, contributes to improving the quality and utility of accounting information;
- 2) use of historical information: it is possible to estimate return predictability based on balance sheet elements at historical values. Using only publicly available data disclosed to the market allows estimation of cost behavior patterns to forecast future costs, thereby assisting decision-making (Pichetkun & Panmanee, 2014). On the other hand, accounting and financial reports published by entities do not signal cost stickiness or its potential impacts on future returns;
- 3) new return predictability model: the inclusion of variables related to cost stickiness proves useful in forecasting returns. Although the presence and level of asymmetry are associated with lower returns, the predictability model incorporating these elements is more accurate for estimating forecasts in the context of entities traded in the Brazilian capital market. It is assumed that a cost structure with higher fixed cost components and managerial optimism regarding new expenditures signals increased revenues generated by operating assets, as well as growth in operating profit. Therefore, it is relevant to consider cost asymmetry variables for return forecasts with reduced errors;
- 4) need for public information on costs: users of information may not understand cost behavior, thus there is a possibility of misjudgment regarding this information (Degenhart; Lunardi; Zonatto & Dal Magro, 2021; Novák et al., 2017). Therefore, it is argued that it is appropriate to estimate return forecasts including cost stickiness information in financial statements, especially in explanatory notes, to avoid or reduce forecasting errors;
- 5) signaling of organizational information to the market: evidence indicates that asymmetric cost behavior results from managerial decisions based on expectations of future demand. The phenomenon may also signal managerial incentives related to compensation tied to earnings and stock prices (Bushman & Indjejukian, 1993). Understanding cost behavior is relevant for analyzing current and future profits. Thus, the lack of knowledge about cost dynamics in entities may induce misjudgment by investors who rely on accounting, financial, economic, and strategic information for investment analysis;
- 6) investors as beneficiaries of cost stickiness signaling: different forms of signaling cost stickiness in the market would reduce informational asymmetry between signalers and receivers. It is also worth highlighting the predictability model, which has practical contributions directed toward other stakeholders in the capital market context;
- 7) reduction of informational asymmetry: assuming the hypothesis that investors and other external users of entities could comprehend the financial statements available in the market, and also understand cost stickiness as incremental information to the statements, it would be possible to expect a reduction in informational asymmetry among stakeholders involved in capital market investments and return expectations;
- 8) managers' expectations about future demand: once entities understand cost stickiness and its influence on future returns, managers responsible for general expenditures must recognize that all decisions related to these elements have the power to influence investment returns, including profitability and profitability ratios. Given this, it is suggested that managerial decisions involving costs and their execution and/or reduction be carefully considered, so that managers strategically or occasionally decide on the disclosure of the possibility of cost asymmetry in accounting reports to the market, signaling the phenomenon through explanatory notes, especially those related to income statements, and their possible impacts on forecasts;
- 9) recommendations to standard-setting and regulatory bodies: various bodies oversee and decide on the content required for the preparation and disclosure of accounting information by entities to the market. It is suggested to improve policies that enhance transparency, as well as new guidelines on the disclosure of cost stickiness in the Brazilian financial market. The revision of the Brazilian accounting standard NBC TG 26, which addresses the presentation of financial statements, is recommended, with changes regarding the content of explanatory notes to highlight the possibility of cost stickiness in the cost structure of companies, as well as the improvement of OCPC 07, which addresses the preparation of explanatory notes. In this regard, it is understood that the IASB, as the guarantor of accounting standards, should establish the recording or explicit disclosure of accounting information that contributes to reducing discretion in disclosure practices in financial statements, especially in explanatory notes. Signaling the phenomenon would allow indication of information related to fixed and variable costs, which would enhance the usefulness of accounting information for investment decision-making by external users;

- 10) continuity of entities: considering that entities operate under the going concern assumption, cost stickiness information and return forecasts could justify entities' futures. The disclosure of these elements would facilitate understanding of entities' transactions from operational, financial, and accounting perspectives. Therefore, it is suggested that managers and entity administrations reflect on how signaled information might interest the capital market and how, as internal users, they could utilize it for business management and discretionary spending decisions.

Given the reflections presented, new perspectives on financial statement analyses for entities are signaled. Knowledge and understanding of information about cost behavior and its influence on return forecasts are incremental and enable more accurate investment decisions and returns. Therefore, an invitation is extended to the academic community to deepen discussions with entities operating in the capital market. Empirical knowledge developed by research helps assist investors in making more assertive decisions regarding the understanding of cost behavior and its influence on forecasting costs and returns. The analysis of the complete set of financial statements goes far beyond current growth and profitability. Thus, joint action between academia and the market is imperative in light of contemporary managerial scenarios.

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SUMMARY

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EFFECT OF FINANCIAL EDUCATION AND ATTITUDES TOWARDS MONEY ON THE PROPENSITY TO INDEBTEDNESS

EFEITO DA EDUCAÇÃO FINANCEIRA E ATITUDES FRENTE AO DINHEIRO NA PROPENSÃO AO ENDIVIDAMENTO

ABSTRACT

The objective of this study was to analyze the effect of financial education and attitudes towards money on the propensity to indebtedness, conducted with a sample of 318 graduate students in Administration and Accounting Sciences in Brazil. The research used a quantitative and descriptive approach, with primary data collection via a cross-sectional survey. The analyses included descriptive statistics, factorial, and linear regression. The results indicated that greater financial education is associated with a reduction in debt propensity and more positive attitudes towards money, while financial attitudes showed a positive correlation with debt propensity. It is noteworthy that financial education not only reduces dependence on non-study-related debt but also improves payment patterns. In addition to its theoretical contributions, by providing a unique perspective on the propensity to indebtedness, this study evidences a practical contribution by associating awareness and improved care with the participants' personal finances, with a lower propensity to indebtedness.

Keywords: Financial Education; Attitudes Towards Money; Propensity to Indebtedness; Behavioral Finance.

RESUMO

O objetivo deste estudo foi analisar o efeito da educação financeira e das atitudes frente ao dinheiro na propensão ao endividamento, conduzido junto a uma amostra de 318 estudantes de pós-graduação em Administração e Ciências Contábeis no Brasil. A pesquisa utilizou uma abordagem quantitativa e descritiva, com coleta de dados primários via survey em corte transversal. As análises incluíram estatísticas descritivas, fatorial e regressão linear. Os resultados indicaram que maior educação financeira está associada a uma redução na propensão ao endividamento e atitudes mais positivas em relação ao dinheiro, enquanto atitudes financeiras apresentaram uma correlação positiva com a propensão ao endividamento. Destaca-se que a educação financeira não apenas reduz a dependência de dívidas não relacionadas aos estudos, mas também aprimora os padrões de pagamento. Além de suas contribuições teóricas, ao fornecer uma perspectiva única acerca da propensão ao endividamento, este estudo evidencia uma contribuição prática ao associar a conscientização e o cuidado aprimorado com as finanças pessoais dos participantes a uma menor propensão ao endividamento.

Palavras-chave: Educação Financeira; Atitudes Frente ao Dinheiro; Propensão ao Endividamento; Finanças Comportamentais.

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1 INTRODUCTION

Indebtedness, often linked to low-income consumers, has expanded in emerging countries, a phenomenon driven in Brazil by easy access to credit, often offered by digital financial institutions (D'Orazio, 2019; Klapper & Lusardi, 2019). Recent data from the Consumer Indebtedness and Delinquency Survey (PEIC) indicated in November 2023 that about 76.6% of Brazilian households had outstanding debts (CNC, 2022).

The causes of indebtedness are widely explored in the literature, with three main factors that stand out: low-income situations, consumption motivated by high incomes, and lack of incentives to save (Katona, 1975). In this context, the relationship between indebtedness and financial education is widely analyzed, gaining prominence as a global concern mobilizing governments, companies, and individuals to understand the level of financial knowledge of contemporary society (Trento & Braum, 2022).

At the national level, Brazil enacted Decree No. 7,397 of September 22, 2010, establishing the National Strategy for Financial Education - ENEF. However, reports issued by the Organization for Economic Cooperation and Development (OECD) reveal an alarming rate of low financial literacy in the country (Vieira et al., 2019), leading to direct consequences on indebtedness and mental health, which directly affect the personal, professional, and social aspects of indebted individuals (Flores, 2012).

In this field, behavioral finance plays a crucial role in understanding financial decisions, which are deeply influenced by emotions and values, and are decisive in the formation of consumption patterns (Durvasula & Lysonski, 2010; Vitt, 2004). The attribution of meaning to money and subsequent actions are strongly linked to perceptions about materialism and its behaviors (Tang, 1995). Therefore, it becomes essential to understand attitudes towards money, as they delineate human behavior, especially buying habits (Durvasula & Lysonski, 2010).

The relationship between financial education, attitudes towards money, and propensity to indebtedness is justified as a relevant and current topic, with direct implications in the lives of individuals and in the orientation of public policies for the control of personal indebtedness and for the development of effective financial counseling strategies (Hoffman & MacNair, 2018; Vieira et al., 2019). Thus, this study aims to analyze the effect of financial education and attitudes towards money on the propensity to indebtedness among graduate students in Administration and Accounting Sciences in Brazil.

The choice of graduate students as a target audience is justified by its strategic relevance, since these individuals have a high potential for academic and social influence. Many of them will be able to act as future teachers, disseminating knowledge about financial education to new generations, in addition to positively impacting colleagues, family members, and communities through more conscious and grounded financial practices and decisions. Such efforts can reduce debt, encourage savings, and foster safer investment decisions.

By exploring the interaction between financial education, attitudes towards money, and factors that influence indebtedness, this research addresses an issue of great contemporary relevance. In addition to highlighting the importance of financial education, this study plays a preventive role in mitigating the potential negative effects of debt on physical and mental health. Additionally, it offers a solid basis for the formulation of financial guidance, more effective communication strategies, and policy interventions aimed at controlling personal indebtedness, thus contributing to the financial and social well-being of individuals (Hoffman & MacNair, 2018; Vieira et al., 2019).

2 LITERATURE REVIEW

2.1 Effect of financial education on the propensity to indebtedness

Education, according to Law No. 9,394, of December 20, 1996, is understood as a formative process that develops in various contexts, such as the family environment, social life, work, educational institutions, and cultural manifestations (Brasil, 1996). This definition reflects the scope of education, which permeates all social spheres and represents a fraction of the way of life of the groups that continuously shape it (Brandão et al., 2017).

The Organization for Economic Cooperation and Development (OECD, 2005) defines financial education as the process by which consumers and investors develop a deeper understanding of financial products, concepts, and risks, and, through information, develop skills and confidence to make more informed decisions about risks and opportunities, among other actions aimed at improving their financial well-being. This definition highlights that financial education transcends the simple saving of resources, also encompassing the understanding of risks and opportunities.

Financial education can be seen as composed of two fundamental stages: (i) financial literacy, which enables individuals to understand financial concepts and products; and (ii) financial empowerment, in which this knowledge is used to improve financial decision-making (Becchetti et al., 2013). This approach is particularly relevant for people facing financial difficulties, since individuals with less financial knowledge tend to make more mistakes, such as late payment of bills, which can lead to a cycle of increasing debt, aggravated by high interest rates, especially on credit cards (Brown et al., 2016).

Data from the Consumer Indebtedness and Delinquency Survey (CNC, 2022) show that, in 2021, the average level of indebtedness of Brazilian households was the highest in 11 years, with an average of 70.9% of Brazilian households having some type of debt. This increase shows greater use of credit, often associated with financial imbalance. Indebtedness, however, is often misunderstood. According to a survey conducted by SPC Brasil and Meu Bolso Feliz, eight out

of ten consumers (79.0%) have a distorted notion of the term indebtedness (CNDL, 2016). Most respondents associate indebtedness with non-payment of bills on time, especially women (52.3%) and those from Classes A and B (59.6%). Only one in five consumers (20.2%) understands the broad significance of indebtedness.

Studies show that financial literacy is directly related to financial behavior. Gathergood and Disney (2011) identified that families with a low level of financial literacy tend to resort to more expensive credit, have lower assets, and face greater difficulties in paying off debts. In contrast, financially literate families demonstrate greater control and efficiency in the use of credit, evidencing more rational financial behaviors.

At the beginning of adult life, financial education plays a crucial role. Brown et al. (2016) investigated the effects of financial coaching on debt outcomes in young Americans and observed that mathematical knowledge and general financial education reduce reliance on non-school-related debt and improve payment behaviors (Brown et al., 2016).

In addition, Fan and Chatterjee (2019) investigated the role of financial socialization, financial knowledge, and financial education in student loan repayment behaviors. The results indicated that individuals who received financial education, whether in the academic or professional environment, were less likely to be late in payments or worry about debt. Additionally, those who learned about finances from their parents show fewer concerns related to student loans, highlighting the importance of family financial socialization (Fan & Chatterjee, 2019).

It is observed, therefore, that financial literacy, a fundamental result of financial education, plays a fundamental role in effective debt management. It enhances individuals' understanding of financial products and services, enabling them to make informed decisions and avoid excessive debt. For example, financial literacy has been shown to reduce risk propensity, which can lead to more cautious lending behaviors (Iannario et al., 2024; Jumady et al., 2024).

In addition, financial education influences financial behavior by instilling better budgeting and financial planning skills, which are essential for managing personal finances. In this sense, financial education can improve budgeting behavior among college students, which is a critical skill for managing personal finances and avoiding debt (Tan et al., 2024). Financial education also promotes financial self-efficacy by motivating individuals to engage in proactive financial behaviors that mitigate debt accumulation (Jumady et al., 2024).

Aforementioned, it is assumed that the higher the level of people's financial education, the lower their propensity to indebtedness. Thus, the first research hypothesis was formulated:

H₁: Financial education is negatively related to the propensity to indebtedness.

2.2 Effect of financial education on attitudes towards money

The literature points out those attitudes towards money are multifaceted, capable of evoking both positive emotions, such as freedom and quality, and negative ones, such as distrust and inadequacy (Medina et al., 1996). Tang (1995) observes that the search for money and the expansion of its possession are common objectives among people, who tend to adjust their consumption patterns as their income increases. This increasing focus on money shapes significant aspects of consumer behavior, turning it into a psychological force that can be associated with materialism or vanity (Durvasula & Lysonski, 2010).

To investigate these nuances, Yamauchi and Templer (1982) developed the Money Attitudes Scale (MAS), a multi-dimensional tool that assesses perspectives on money, such as power-prestige, retention, distrust, quality of purchases, and anxiety. The scale is based on psychological and psychoanalytic foundations, highlighting three main dimensions: security, retention, and power-prestige.

Medina et al. (1996) applied MAS to Mexican and Anglo-American consumers, identifying cultural differences in the dimensions of retention/time and quality. Consumers in both cultures were less likely to delay spending in exchange for future gratification, challenging the idea that Hispanic consumers prioritize prestige goods. In another study, Dowling et al. (2009) examined how financial problems influence attitudes toward money and seeking financial advice. The sample consisted of 400 young Australian workers, and the results highlighted the importance of educational initiatives aimed at changing financial habits and accepting professional support to cope with economic hardship.

Durvasula and Lysonski (2010) examined the attitudes of young Chinese consumers towards money and its impact on elements of consumer behaviour, especially about materialism and vanity. Using MAS, the results indicated that materialism was associated with the dimensions of power-prestige and anxiety, while vanity was influenced only by power-prestige.

Financial education is a transformative factor in the formation of healthier attitudes towards money. Becchetti et al. (2013), for example, conducted a randomized experiment in 36 Italian schools to assess the impact of a 16-hour course on financial literacy. The results demonstrated significant improvements in participants' financial understanding, increasing their propensity to interpret economic articles and improving attitudes towards investments.

Qamar et al. (2016) delved into the relationship between attitudes towards money and financial behavior, highlighting the moderating role of financial knowledge and self-efficacy. In a study of employed college students, the results revealed that positive attitudes toward money and greater financial literacy were associated with better personal financial management practices. Financial knowledge also had a moderating effect, intensifying the impact of attitudes on financial behavior.

Kaiser et al. (2022) contributed to a comprehensive review on the impact of financial education in 76 randomized experiments, involving more than 160,000 individuals. The findings confirmed significant positive effects on financial knowledge and behavior, reinforcing the effectiveness of educational programs to change attitudes towards money.

Based on this theoretical foundation, the following research hypothesis is formulated:

H₂: Financial education is negatively related to the attitude towards money.

2.3 Effect of attitudes towards money on the propensity to indebtedness

Watson (2003) examined variations in the propensity to spend or save and in attitudes related to borrowing, considering different levels of materialism among individuals. The survey, conducted through questionnaires applied to residents of the state of Pennsylvania, in the United States, revealed that highly materialistic individuals are more likely to identify themselves as spenders and demonstrate more favorable attitudes towards the use of loans.

Durvasula and Lysonski (2010) classified consumers into three categories based on their attitudes toward money: those who see it as a tool of power, those who express distrust in financial interactions, and those who consider money a source of anxiety. Consumers who associate money with social power tend to acquire material goods to flaunt status, which can lead to compulsive shopping. Similarly, consumers who perceive money as a source of anxiety tend to turn to compulsive shopping as a means of alleviating that anxiety (Durvasula & Lysonski, 2010).

Sotiropoulos and d'Astous (2013) conducted a study with a sample of 225 university business students, aiming to highlight the influence of the social environment on the behavior of young consumers in relation to the use of credit cards. The results revealed that social factors have a significant impact on excessive credit card spending in general. In other words, the propensity of young consumers to spend more on credit cards is positively influenced by the financial perceptions and behaviors of their personal contacts.

In Brazil, Flores and Vieira (2014) proposed a behavioral model to assess the propensity to indebtedness, based on data from 1,046 residents of Santa Maria (RS). The results indicated a significant association between risk perception, conservative behavior in the face of risks, and levels of indebtedness and materialism. The study also identified differences in debt levels based on sociodemographic variables, highlighting the importance of these factors in financial behavior (Flores & Vieira, 2014).

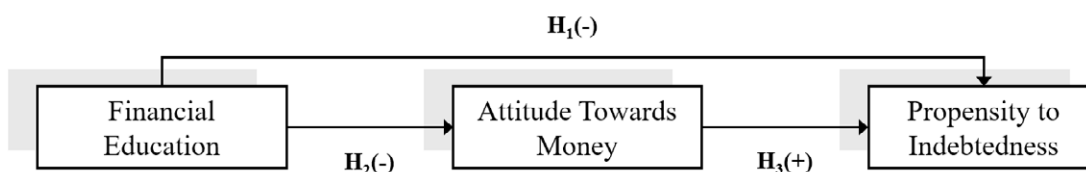
Similarly, Oliveira (2020) investigated the behavioral factors that influence the propensity to indebtedness, using a sample of 319 students from a private university in São Paulo. The results showed that behavior is the main factor associated with the propensity to indebtedness, while sociodemographic variables such as gender, race, marital status, occupation, and income also influence the degree of indebtedness. In addition, the levels of risk perception, materialism, and propensity to indebtedness were similar between the indebted and non-indebted groups, while the levels of behavior and financial rationality differed between these groups.

In this context, it is assumed that attitudes towards money are positively associated with the propensity to borrow. Thus, the following research hypothesis is formulated:

H₃: The attitude towards money is positively related to the propensity to indebtedness.

Figure 1 presents the theoretical model of the study, portraying the hypotheses formulated.

Figure 1 - Theoretical Research Model



3 METHODOLOGY

3.1 Population, sample and data collection procedures

This study adopts a descriptive, quantitative perspective, utilizing primary data collection through a survey with a cross-sectional research design. The target population consists of graduate students in administration and accounting, linked to the stricto sensu level. The identification of graduate programs was conducted through a search on the Sucupira Platform, a reference for the Brazilian National Graduate System.

In the selection of graduate programs, a filter was applied in the evaluation area of the platform, specifically in "Public and Business Administration, Accounting Sciences and Tourism". Although the classification includes the area

of Tourism, the exported list found the absence of any graduate program registered in this domain. In the exported list, it was observed that 7 universities presented graduate programs in administration or accounting sciences, totaling 179 programs.

After this identification, e-mails were sent to the course secretariats, including a detailed description of the research proposal and the request for the questionnaire to be passed on to the enrolled students. During this process, 3 emails were deemed invalid, and one of the listed programs had already been discontinued. Data collection took place between July and August 2022, covering a total period of 21 days. During the period, 318 questionnaires were received and duly answered, constituting a non-probabilistic, intentional sample obtained by accessibility.

To ensure the reliability and anonymity of the answers, an Informed Consent Form (ICF) was provided at the beginning of the questionnaire, in which the participants declared their agreement to participate in the research and authorized the use of the data for scientific publications. At the end of the form, participants were offered the option to provide an email address for participants who wished to receive a summary of the study's key results.

3.2 Measures

The instrument used in this research was developed on the Microsoft Forms® platform and is organized in four blocks, totaling 52 questions. Among these, 20 are related to financial education, 16 address attitudes towards money, 9 explore the propensity to indebtedness, and 12 aim to characterize the respondents.

To measure the level of financial education, the scale validated by Matta (2007) was adopted, consisting of 20 items adapted from the original instrument by Chen and Volpe (1998). The questions were evaluated using a 5-point Likert scale, ranging from 1 (Never) to 5 (Always).

Regarding attitudes towards money, the short version of the Money Attitude Scale (MAS) was used, originally developed by Yamauchi and Templer (1982) and validated for the Brazilian context in its short version by Pimentel et al. (2012). MAS is subdivided into 4 dimensions: power, retention time, distrust, and anxiety, each reflecting different aspects of the individual's relationship with money. These items were answered using a Likert scale, ranging from 1 (Never) to 5 (Always).

To assess the propensity to indebtedness, the scale translated and validated by Moura (2005) was used, adapted from the original scale by Lea et al. (1995). This scale, widely used in studies on the subject, as mentioned by Flores & Vieira (2014), Oliveira (2020), Pinto and Rossato (2019), and Campos and Costa (2021), is divided into three dimensions: degree of self-control, time preference, and moral impact on society. The questionnaire is assessed using a Likert scale, ranging from 1 (Strongly disagree) to 5 (Strongly agree).

The last section of the instrument contains questions to characterize the respondents, including information such as gender, age, marital status, dependents, financial situation, type of scholarship, type of course (master's, doctorate, and post-doctorate), search for financial information, and retirement planning. This section aims to establish the profile of the participants evaluated in the study.

3.2 Data Analysis Procedures

To validate the constructs and explore the relationships between the measured variables, the statistical technique of Exploratory Factor Analysis (EFA) was adopted, as recommended by Hongyu (2018). This approach was considered appropriate for all the constructs investigated, as pointed out by Flores & Vieira (2014). The factor analysis model is represented by Equation 1, as shown below:

$$F = \alpha_1 F_1 + \alpha_2 F_2 + \dots + \alpha_k F_k + \varepsilon \quad (1)$$

Where:

F represents the factors extracted from the factor analysis

Next, the Simple Linear Regression technique was applied, which, according to Fávero et al. (2009), allows the study of the linear relationship between an independent variable and a dependent variable. The following are the generated models, along with their corresponding variables.

$$ATD = \alpha_1 + \beta_1 ED + \varepsilon \quad (2)$$

$$PE = \alpha_1 + \beta_1 EF + \varepsilon \quad (3)$$

$$PE = \alpha_1 + \beta_1 ATD + \varepsilon \quad (4)$$

Where:

FE represents Financial Education

ATM represents Attitude Towards Money

PI represents Propensity to Indebtedness

For data analysis, the following software was used: Microsoft Excel® for data tabulation, using descriptive frequency and percentage analysis. The Factor Analysis method was used to reduce the number of items, identifying the most representative variables of each construct, as indicated by Hair et al. (2019) and Kirch et al. (2017). The SPSS (Statistical Package for the Social Sciences) software was used for the statistical analysis of the data, using the linear regression method.

4 RESULTS

4.1 Descriptive analysis

The descriptive analysis of the participants revealed that, at all educational levels (master's, doctorate, and post-doctorate), the female gender predominated, with 62.89% of the respondents being women. Regarding the age group, it was observed that the most common category was between 31 and 40 years old, representing 40.57% of the participants, followed by the 25 to 30 year old group, with 35.22%. Regarding marital status, most participants were single (53.14%), while 46.54% were married. In terms of dependents, most did not have it (65.09%).

With regard to financial situation, most participants were employed (62.58%), while 36.16% received a scholarship or family assistance. The most common scholarship among participants was CAPES (72%), followed by CNPQ and other scholarships (FAPESC, UNIEDU, etc.).

Regarding the search for information related to personal finances, it was found that 38.05% of the respondents sought it only when necessary, 42.14% sought it frequently to stay informed, and 19.81% never or almost never sought it. It was noted that the individuals who did not seek information about personal finances were mostly those without dependents (77.42%), and 87.10% of these were women, of whom 67.74% were single or divorced. The most used means to search for information were the internet (68.87%) and seminars and lectures (13.21%).

4.2 Evaluation of the Measurement Model

In this phase, an evaluation of the measurement model was initially conducted, covering the latent variables of the study through Exploratory Factor Analysis (EFA), allowing the identification of the underlying relationships between the measured latent variables (Hongyu, 2018). As explained by Hongyu (2018), in the EFA model, if one variable demonstrates statistical independence from the others, exhibiting reduced correlations, such variables can be eliminated because they do not contribute to the formation of a common factor.

After the model was executed, the ATM1 indicators of the attitudes towards money construct, PI7 of the debt propensity construct, and the FE3, FE6, FE9, FE11, FE14, FE15, FE16, FE19, and FE20 indicators of the financial education construct were removed, as they did not meet the minimum recommended levels of correlation. Hair et al. (2022) suggest that a correlation value of 0.500 is the minimum acceptable threshold. After excluding the aforementioned indicators, the structural model was evaluated.

4.3 Evaluation of the Structural Model

In the next stage of the research, the simple linear regression method was used to evaluate the structural model. According to Hair Jr. et al. (2022), this model is fundamental to examining the dependency relationships between the investigated constructs, verifying the proposed hypotheses.

Table 1 - Regression Model Statistics

Model	R	R ²	R ² Adjusted	Standard Error
FE → ATM	0.244	0.060	0.057	0.971
FE → PI	0.350	0.123	0.120	0.938
ATM → PI	0.350	0.107	0.104	0.947

Note: (ATM) Attitude Towards Money; (FE) Financial Education; (PI) Propensity to Indebtedness.

According to Fávero et al. (2009), the R² in a regression model is used to express the explanatory power, representing the percentage of variation of an independent variable, ranging from 0 to 1 (0% to 100%). The closer to 1, the greater the explanatory power. As shown in Table 2, when comparing the values of R and R² of the three models analyzed

(0.06%, 0.12%, and 0.10%), a small variation is observed in the three relationships. Stock and Watson (2004) and Favero et al. (2009) explain that the value of R^2 is not sufficient to determine whether a variable is the true cause of a change in the dependent variable. However, low values may indicate the presence of other variables influencing these relationships.

For a deeper understanding of the significance of the regression model and the pre-established relationships, other factors are analyzed, as evidenced in Tables 2 and 3.

Table 2 - Analysis of Variance Test - ANOVA

Model		Sum of Squares	df	Medium Square	z	p-value
FE → ATM	Regression	18.899	1	18.899	20.033	0.000
	Residue	298.101	316	0.943		
	Total	317.000	317			
FE → PI	Regression	38.914	1	38.914	44.220	0.000
	Residue	278.086	316	0.880		
	Total	317.000	317			
ATM → PI	Regression	33.773	1	33.773	37.681	0.000
	Residue	283.227	316	0.896		
	Total	317.000	317			

Note: (ATM) Attitude Towards Money; (FE) Financial Education; (PI) Propensity to Indebtedness.

The Analysis of Variance Test (ANOVA) is used to compare the variation between the medians of different groups and is also used to verify the significance of the model (Hair et al., 2022). From the results presented on the significance of the models, which are close to zero, it was possible to reject the null hypothesis of equality between the explained and unexplained variances in the three models. This suggests that, even with low values of R^2 , there is an explanatory potential in the models considered, indicating significant differences in the behavior of the dependent variables, given the explanatory variables. As observed in Table 3, the models were significant at the 1% level.

Table 3 - Coefficients

Model		Non-standard coefficients		Standardized coefficients	t-value	p-value
		β	Standard Error	Beta		
FE → ATM	(Constant)	-7.474E-17	0.054		0.000	1.000
	ED	-0.244	0.055	-0.244	-4.476	0.000
FE → PI	(Constant)	1.819E-18	0.053		0.000	1.000
	ED	-0.350	0.053	-0.350	-6.650	0.000
ATM → PI	(Constant)	4.908E-17	0.053		0.000	1.000
	ATD	0.326	0.053	0.326	6.138	0.000

Legend: (ATM) Attitude Towards Money; (FE) Financial Education; (PI) Propensity to Indebtedness.

The analysis revealed varying levels of acceptance of the three hypotheses in the study. The relationships indicated by the results of the p-values suggest that H1 (FE → PI) and H2 (FE → ATM) are interconnected, in the sense that financial education (FE) acts simultaneously on the propensity to indebtedness (PI) and on attitudes towards money (ATM). In addition, H3 (ATM → PI) showed a positive relationship. In general, these results suggest that the increase in the level of financial education is associated with a reduction in the levels of delinquency (Brown et al., 2016). According to the OECD (2015), financial education goes beyond simple economics, encompassing the understanding of money and awareness of financial opportunities and risks.

4.4 Discussion of the results

The findings of this study offer significant contributions to the understanding of the relationships between financial education, attitudes towards money, and propensity to indebtedness. Three hypotheses were examined and confirmed, showing a negative association between financial education and attitudes towards money (H1), as well as between financial education and propensity to indebtedness (H2), and a positive association between attitudes towards money and propensity to indebtedness (H3). The analysis of the influence of financial values reveals that individuals who value the possession of money tend to have a lower propensity to indebtedness due to planned saving and spending practices. In contrast, those who perceive money as an indicator of power and status maintain a high standard of consumption, which is correlated with a greater propensity to borrow. This relationship is additionally associated with the phenomenon of materialism, where high levels of this trait are aligned with a greater propensity to indebtedness.

The results collected corroborate this dynamic, with a considerable portion of respondents (11.63%) expressing agreement with taking on debts to settle bills and a percentage (9.43%) demonstrating a lack of prioritization of savings prior to spending. In addition, 34.27% of respondents prefer to pay in installments instead of paying in cash, and 52.83% see no problem in having debt, as they know they can pay it later. These findings echo previous findings, such as those by Brown et al. (2016), which also indicate that financial education plays a role in reducing dependence on debt and improving payment habits.

The more intensive presence of financial education between business and accounting students suggests a possible reduction in the propensity to indebtedness, as evidenced by the high percentage of respondents who frequently seek information about personal finances. This insight is supported by studies such as Gathergood and Disney (2011), which point out that families with greater financial literacy adopt a more rational approach to financial control.

The analysis of variables such as age, number of dependents, and financial situation coincides with previous investigations (Katona, 1975; Flores & Vieira, 2014; Oliveira, 2020), which report a greater propensity for indebtedness among female individuals. The distinction between groups of students, based on source of income, reveals significant differences in interest in financial information and in the formulation of retirement plans. This highlights the direct influence of income source on the individual's approach to personal finance.

Attitudes towards money influence the propensity to indebtedness, especially when high levels of materialism are observed, as pointed out by Durvasula and Lysonski (2010). However, among graduate students in administration and accounting, a low level of materialism was identified, possibly attributable to the financial education offered. These conclusions reinforce the relevance of financial knowledge in the adoption of responsible financial behaviors and corroborate previous findings, such as those of Qamar et al. (2016), which establish a positive relationship between financial knowledge and more prudent financial practices.

In summary, this study not only confirms previously proposed relationships but also highlights the importance of financial education in the formation of healthier financial attitudes and practices, especially among students with greater exposure to this type of knowledge. These findings have significant implications for educational policies and intervention programs aimed at developing financial skills, aiming to reduce the propensity to indebtedness, and promoting more responsible financial behaviors.

5 FINAL CONSIDERATIONS

The objective of this study was to analyze the effect of financial education and attitudes towards money on the propensity to indebtedness. H1, which proposed a negative relationship between financial education and propensity to indebtedness, was confirmed, indicating that greater financial education significantly reduces the propensity to indebtedness. H2, which explored the negative relationship between financial education and attitudes towards money, was also supported by the data, suggesting that greater financial education is associated with more conscious and balanced attitudes towards the use of money. Finally, H3, which postulated a positive relationship between attitudes towards money and propensity to indebtedness, was confirmed, showing that less conscious financial attitudes contribute to higher levels of indebtedness.

The analysis revealed that financial education plays a central role in shaping healthier financial behaviors, reducing the propensity to indebtedness, and positively influencing financial attitudes. From these findings, it was possible to establish that each specific objective of the study was consistently contemplated, reinforcing the relevance of the relationships between the investigated constructs. These results corroborate the existing literature and highlight the importance of initiatives aimed at financial education to promote financial stability in different contexts.

As can be seen, indebtedness is a complex phenomenon with deep roots that go beyond the mere financial aspect. Studies highlight the relevance of financial education as a crucial preventive element to enable people to manage their resources and prevent the accumulation of debt (Flores & Vieira, 2014; Kaiser, 2022). During this research, a high level of financial awareness was found among the participants, correlated with a lower propensity to indebtedness. This not only opens up new perspectives for investigation but also points to additional areas of study, including a more detailed analysis of adverse impacts such as the stress derived from the intense load of academic activities and the low yields offered by scholarships.

Attitudes towards money play a crucial role in the propensity to get into debt. Individuals with a lack of emotional control in financial matters often spend excessively, making them more susceptible to taking on debt (Durvasula & Lyonski, 2010). Additionally, the absence of financial planning results in impulsive purchases and the inability to honor financial commitments. In this context, financial education offers guidance on how to plan and manage expenses, assisting in decision-making related to finances.

Stone and Maury (2006) identified that behaviors such as obsession, inadequacy, and retention play significant roles in indebtedness. Those who cultivate the habit of saving tend to value their financial resources more, while negative attitudes towards money can generate motivation problems, emotional imbalances, and behavioral changes (Flores & Vieira, 2014). Bad financial habits, excessive consumption, and indiscriminate use of credit are examples of negative attitudes that directly impact the propensity to indebtedness. In addition, other factors such as stress, anxiety, and individual characteristics can influence this dynamic, contributing to improving or worsening the way each person manages their finances.

This study offers significant contributions by debating contemporary issues from different perspectives, aiming to identify other factors that impact the propensity to indebtedness. In addition, it sought to understand the financial behavior of individuals who have greater access to financial education. The findings reveal not only the direct relationship between attitudes toward money and indebtedness but also highlight the crucial importance of factors such as stress, anxiety, and individual characteristics in financial dynamics.

The findings of this study have significant implications both for practice in society and for the theoretical advancement of scientific research. In the practical sphere, they offer a detailed look at the determinants of indebtedness, helping to develop effective financial education strategies and interventions to mitigate excessive indebtedness. These findings can guide public policies aimed at financial awareness, as well as direct educational programs that aim to improve financial literacy from the early stages of education.

On the theoretical level, the findings provide a solid foundation for future research, highlighting the need to consider not only aspects of financial knowledge but also the behavioral, emotional, and psychological factors that shape individual financial decisions. This can stimulate new multidisciplinary studies that further explore the intersection between psychology, human behavior, and finance, thereby enriching the field of academic literature in this area.

The study has some important limitations that should be considered. Although the results revealed a lower propensity for debt among respondents who are more aware and careful with their personal finances, it is crucial to recognize that the variables and relationships established have their limitations. Generalizing specific examples of debt propensity can be challenging due to the diversity of individual contexts and external influences. Therefore, it is suggested that longitudinal experiments be carried out in order to minimize possible measurement errors and ensure a deeper understanding of these phenomena over time.

In addition, the study identified the influence of variables such as stress, anxiety, and individual characteristics on financial behavior but did not delve into their role as mediators of these relationships. These variables can play crucial roles, acting as mediators between financial awareness and financial behavior. Thus, there is a research opportunity to explore the direct and indirect influence of these factors, providing insights into how such aspects impact indebtedness and financial decisions.

Therefore, the inclusion of additional mediating and moderating variables is essential for a more comprehensive and accurate analysis of these phenomena. This will allow for a more holistic understanding of the relationships between financial awareness, attitudes towards money, and propensity to indebtedness, contributing to the evolution of research in this area and the creation of more effective financial education strategies.

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APPENDIX A – RESEARCH INSTRUMENTS

Table A1 - Attitudes Towards Money

Dimension	Code	Indicators
Power	ATM_P1	I buy things that I know will impress other people.
	ATM_P2	Although I should judge people by their actions, I am more influenced by the money they have.
	ATM_P3	I have cool things to impress other people.
	ATM_P4	I use money to influence people to do something for me.
Retention	ATM_R1	I follow a cautious financial budget.
	ATM_R2	I save money now to prepare for old age.
	ATM_R3	I regularly save money for the future.
	ATM_R4	I have money saved in case of an economic crisis
Distrust	ATM_D1	I automatically say that I can't afford it, even if I can.
	ATM_D2	When I buy something, I complain about the price.
	ATM_D3	I argue or complain about the price of the things I buy.
	ATM_D4	After buying something I wonder if I could have bought it cheaper elsewhere.
Anxiety	ATM_A1	I get upset when I miss a sale.
	ATM_A2	I show signs of nervousness when I don't have enough money.
	ATM_A3	I spend money to feel better.
	ATM_A4	It's hard for me to miss a bargain.

Source: Pimentel et al. (2012)

Table A2 - Financial Education

Code	Indicators
FE1	I worry about managing money better.
FE2	I write down and control monthly expenses (e.g., spreadsheet of monthly income and expenses, notebook of financial notes, etc.).
FE3	I set financial goals that influence the management of my finances (e.g. Save an amount in 1 year, get out of overdraft in 3 months).
FE4	I follow a weekly or monthly budget or spending plan.
FE5	I go more than a month without taking stock of my expenses.
FE6	I am satisfied with the financial control system.
FE7	I pay the bills without delay.
FE8	I can identify the costs I pay when buying a product on credit (e.g. embedded interest).
FE9	I use a bank credit card because I don't have money available for expenses.
FE10	When buying in installments, I compare the available credit options (e.g., store financing vs. credit card financing).
FE11	More than 10% of the income I receive the following month is committed to credit purchases (except for real estate or vehicle financing).
FE12	I pay the credit card bill in full in order to avoid financial charges (interest and penalty).
FE13	I check the credit card statement to check for errors and undue charges.
FE14	I save monthly.
FE15	I save with the intention of buying a product of higher value such as a car, real estate, etc.
FE16	I have a financial reserve that is greater than or equal to 3 times my monthly income, which can be used in unexpected cases (e.g., unemployment, health).
FE17	I compare prices when making a purchase.
FE18	I analyze my finances in depth before making any big purchase.
FE19	I buy on impulse.
FE20	I prefer to buy a financed product instead of saving money to buy in cash.

Source: Matta (2007)

Table A3 - Propensity to Indebtedness

Dimension	Code	Indicators
Impact of morality on society	PII1	It is not right to spend more than I earn.*
	PII2	I think it's normal for people to go into debt to pay for their things
	PII3	People would be disappointed in me if they knew I was in debt.*
Time preference	PIT4	It's best to save money first and then spend it.*
	PIT5	I prefer to buy in installments than wait to have money to buy in cash.
	PIT6	I prefer to pay in installments even if in total it is more expensive.
Degree of self-control	PIG7	I know exactly how much I owe in stores, credit card or bank.*
	PIG8	It is important to know how to control the expenses of my house.
	PIG9	It's okay to have debt if I know I can pay.

Source: Moura (2005)

Note: * Reverse items

POLITICAL SKILLS AMONG ACCOUNTING STUDENTS: DIFFERENCES BASED ON EXPOSURE TO THE BUSINESS COMMUNICATION COURSE

HABILIDADES POLÍTICAS EM ESTUDANTES DE CIÊNCIAS CONTÁBEIS: COMO SE DIFERENCIAM PELA EXPOSIÇÃO À DISCIPLINA DE COMUNICAÇÃO EMPRESARIAL

ABSTRACT

Communication and political skills play crucial roles in organizations, alongside the technical skills expected of Accounting professionals. Given this, regulatory bodies, both national and international, emphasize the importance of developing these competencies during the Accounting program in their guidelines. In this context, this study aimed at identifying potential differences in the political skills of Accounting students based on their exposure to the Business Communication course. Additionally, it sought to understand the associations between the dimensions of Political Skill. Data were collected from 131 Accounting students who had taken the Business Communication course and 133 students who had not been exposed to this or an equivalent subject. The Mann-Whitney and Kruskal-Wallis tests were applied to analyze differences in Political Skill dimensions, following a Confirmatory Factor Analysis that validated the consistency of the factorial indicators. Additional analyses were conducted using Spearman's coefficient. The findings suggest that the Business Communications course does not necessarily impact the development of better political skills, as those who did not take it were more socially astute, while there were no significant differences in the other dimensions. Furthermore, additional analyses indicated that the political skill factors are complementary, as all were significantly positively associated with each other. This research contributes to the literature by addressing a research gap and providing insights for the curriculum design of Accounting programs.

Keywords: Political Skills, Business Communication, Accounting Sciences, Students.

RESUMO

A comunicação e as habilidades políticas possuem papéis cruciais nas organizações, assim como as habilidades técnicas esperadas dos profissionais contábeis. À vista disso, órgãos reguladores, tanto nacionais quanto internacionais, explicitam a importância do desenvolvimento dessas competências durante o curso de Ciências Contábeis em suas diretrizes. Atentando-se a isso, este estudo buscou identificar as possíveis diferenças na habilidade política de estudantes de Ciências Contábeis a partir da exposição à disciplina de Comunicação Empresarial. Adicionalmente, buscou-se compreender como estão associadas as dimensões de Habilidade Política. Para tanto, foram coletados dados de 131 discentes de contabilidade que cursaram a disciplina de Comunicação Empresarial e 133 estudantes que não foram expostos a esta disciplina ou equivalente. Foram empregados os testes de diferença de Mann-Whitney e Kruskal-Wallis para as variáveis e para as dimensões de Habilidade Política, após uma Análise Fatorial Confirmatória confirmar a consistência dos indicadores fatoriais. As análises adicionais foram realizadas através do coeficiente de Spearman. Os achados sugerem que a disciplina de Comunicação Empresarial não necessariamente impacta no desenvolvimento de melhores habilidades políticas, visto que aqueles que não a cursaram, se mostraram mais socialmente astutos, enquanto nas outras dimensões não houve diferença significativa. Além disso, as análises adicionais indicaram que os fatores de habilidade política são complementares, dado que todos estavam associados significativamente entre si de forma positiva. A pesquisa contribui para a literatura ao mitigar uma lacuna de pesquisa, além de apresentar implicações para as matrizes curriculares dos cursos de Ciências Contábeis.

Palavras-Chaves: Habilidades Políticas, Comunicação Empresarial, Ciências Contábeis, Estudantes.

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1. INTRODUCTION

The organizational environment is dynamic and requires management to play a crucial role that goes beyond technical competence, drawing on education, experience, and the ability to influence others for career advancement. In this environment characterized by competitiveness, decisions and outcomes are influenced by factors that extend beyond technical competencies, and political skill emerges as a crucial determinant of professional success (Todd et al., 2009; Geyer, 2014).

Ferris et al. (2007) pointed out that political skill consists of the ability to adapt behavior in different situations to inspire support and trust, in addition to influencing people sincerely. This type of skill comprises four main dimensions: (i) social astuteness; (ii) networking ability; (iii) interpersonal influence; and (iv) apparent sincerity (Ferris, et al., 2005). Political behavior in organizations reaches its peak when combined with effective communication (Del Prette & Del Prette, 2007), which can be defined as the transmission of a message from a sender to a recipient in a comprehensible manner (Sanchez, 2002).

Political and communication skills are concepts that play crucial roles in professional environments facing rapid changes, demanding high adaptability and resilience. Notably, political skill transcends technical knowledge and specific competencies in the accounting field, encompassing aspects related to emotional intelligence, effective communication, and negotiation ability (Todd, et al., 2009; Geyer, 2014).

Furthermore, communication is highlighted both by regulatory bodies and Brazilian literature on the training of accounting professionals (Marin et al., 2014; Miranda et al., 2017). Improving communication skills, especially oral communication, is perceived as a challenge in Accounting programs (Cornacchione & Trombetta, 2005; Ribeiro, 2009; Marin et al., 2014; Lima et al., 2021). This scenario is reinforced by Grace and Gilsdorf (2004), who state that accounting students, although technically proficient, often face difficulties in oral communication.

In agreement with the literature and other regulatory bodies, the International Federation of Accountants (IFAC), through the International Panel on Accountancy Education (IPAE), includes interpersonal and communication skills among the professional skill areas to be developed in future Accounting professionals, as set out in “International Education Standard 3: Initial Professional Development – Professional Skills” (IFAC, 2025).

In the context of a pandemic and the return to in-person teaching activities, Almeida et al. (2023) found a concentration of respondents at medium-high and high levels of political skill among Accounting students, a result different from that suggested by Splitter and Borba (2014) when addressing communication aspects. The authors (Almeida et al., 2023) also found no significant differences when examining political skills across sociodemographic groups and the nature of the educational institution.

Social isolation resulting from the atypical period of the global pandemic at the beginning of 2020 affected different groups of the general population in distinct ways. Particularly in the educational context, in-person teaching activities were replaced by a distance learning modality implemented unexpectedly. As a result, both teachers and students struggled to adapt to new digital platforms and faced a scarcity of resources, including access to computers and the internet, as well as the necessary physical space (Kelsey, 2020; Santos & Zaborosky, 2020; Saldanha, 2020).

In view of this, the educational literature during this period was marked by a series of studies that sought to understand the psychosocial effects of the pandemic and Emergency Remote Teaching (ERT) on the routine of students from the most varied areas of education (e.g., Maia & Dias, 2020; Ceribeli et al, 2022). In accounting education, different studies suggest a possible impact on students’ stress and burnout levels (Mohd Isa et al, 2021; Rosário, et al, 2023), in addition to a negative association between the levels of technical and social skills, such as communication, and the daily life realities and other subsequent activities experienced during the pandemic (Meurer & Rosário, 2024).

In addition to the possible effects of the pandemic, the students analyzed by Almeida et al. (2023) were not exposed to any course that directly aimed at developing political skills, making it timely to compare this sample with students from another higher education institution who had been engaged in this process. From these concerns, the research question arises: What are the potential differences in the political skills of Accounting students based on exposure to the Business Communication course? Additionally, we sought to evaluate potential differences based on sociodemographic characteristics and exposure to the pandemic period, and analyses were carried out to understand how the different dimensions of Political Skills are associated.

2 THEORETICAL FRAMEWORK

2.1 Political Skills

Studies on political skills in academic literature have been reported for at least four decades, recognizing organizations as political environments where interactions and power games are crucial (Mintzberg, 1985; Pfeffer, 1981). Influence and persuasion are often highlighted as critical aspects in this context (Mintzberg, 1983; Pfeffer, 1981).

Political skill, characterized by Ferris et al. (2003), involves the fusion of social skills and the ability to establish positive interpersonal relationships, demonstrating authentic, sincere, and trustworthy behaviors. Ferris et al. (2007) emphasize that this skill includes adapting behaviors to inspire support, trust, and influence the behavior of others. Ori-

entation, training, and social integration are viable means of developing this skill (Ferris et al., 2003; Pfeffer, 2010), with suggestions for investment in training programs and practices such as mentoring, simulations, and experiential exercises (Bing et al., 2011; Cullen et al., 2018).

Social Influence Theory is commonly used to understand how people utilize influence to achieve their goals in this political environment (Levy et al., 1998; Todd et al., 2009). Levy et al. (1998) proposed four categories to clarify the mechanism of social influence: (i) level of cognitive processing, (ii) interpretation of intentions, (iii) relative social position, and (iv) direction of change. The first category is related to the access the influenced individual has to influence mechanisms, which can be engaged either consciously or unconsciously; the second, as the name suggests, deals with the influenced individual's perception of the influencer's intentions, that is, whether they are actively seeking to alter some perception or behavior of the former. In turn, the relative social position depends on the hierarchical relationship between the actors (i.e., superior, similar, inferior, or irrelevant), and the direction of change refers to the effect of the influence (i.e., positive, negative, or irrelevant) (Levy et al., 1998).

The aforementioned categories follow an ordinal arrangement in the Social Influence process, and the combination of different variables from each stage can completely change the type of influence exerted. For example, if the influenced individual is aware of the influence mechanisms, interprets the influencer's intention as intentional, perceives them as a hierarchical superior, and behaves accordingly, the influence exerted is obedience. However, by changing only the direction of change, that is, if the influenced individual is not aligned with the influencer's position, the influence exerted is rebellion (Levy et al., 1998).

In addition, Todd et al. (2009) suggest that individuals with more developed political skills use influencing tactics to achieve advantageous results, especially in contexts of compensation or performance evaluation. In this line, Ferris et al. (2005) developed an instrument that allows measuring different facets of political skills, composed of the four dimensions detailed below.

Social Astuteness is defined by an individual's ability to identify various signals during social interactions and interpret them accurately, such as body language. Socially astute individuals can discern different behaviors of others and are more aware of their own attitudes in social interactions (Ferris et al., 2005).

Interpersonal Influence, in turn, is related to the ability to adapt one's own behavior in different situations to achieve various objectives. Due to this characteristic of adaptive persuasion, this dimension is distinguished by its effectiveness in influencing other individuals (Ferris et al., 2005).

Networking Ability refers to the aptitude to establish, develop, and maintain interpersonal contact networks, thus creating new friendships and beneficial alliances more easily. This skill becomes useful in contexts of negotiation and conflict management (Ferris et al., 2005).

Finally, individuals who can convey an image of integrity, authenticity, and genuineness tend to stand out for their Apparent Sincerity. Thus, their actions and behaviors tend not to be interpreted as coercive, manipulative, or motivated by ulterior purposes, facilitating the influence process (Ferris et al., 2005).

These political skills are crucial for avoiding negative perceptions and conveying confidence and security (Ferris et al., 2005; Butt et al., 2017). Employees and leaders can benefit from these competencies (Chen et al., 2021; Yildiz, 2018), which are associated with better job performance and positive attitudes (Todd et al., 2009; Chen et al., 2021).

According to Chen et al. (2021), political skills not only drive career progression but also contribute to the mental well-being of professionals. Individuals with well-developed political skills establish harmonious relationships, create less stressful work environments, and generate opportunities for professional advancement. Furthermore, professionals with political skills tend to achieve professional success, as reflected in proactive behavior, engagement with the company, a positive reputation, self-confidence, and job satisfaction (Geyer, 2018).

Oral and written communication are essential for accounting professionals, particularly when preparing financial reports and interacting with diverse stakeholders (Hirsch et al., 1994). The relevance of this competence increased with the adoption of International Financial Reporting Standards (IFRS), which sought to simplify the understanding of accounting information in a globalized world (Marin et al., 2014; Lawson et al., 2014; Sithole, 2015).

The transition to IFRS required accounting professionals to reflect and demonstrate skill in the contextualized application of knowledge and competencies (Barth, 2008; Sunder, 2010; Jackling et al., 2012). In this context, the accountant ceased to be seen as merely a calculator restricted to repetitive tasks, becoming an active participant in decision-making processes (Baldvinsdottir et al., 2009).

In higher education, academic programs in Accounting must follow guidelines established by professional bodies to train professionals with a global perspective (Lima et al., 2021). The guidelines of the National Education Commission (NEC) include verbal and written expression as an underlying competence in at least three areas. The IPAE highlights interpersonal and communication competence in International Education Standard 3 (2025). Thus, the training of accounting professionals should support the development of verbal and written communication competencies, in accordance with national and international guidelines (Lima et al., 2021).

Although the importance of communication proficiency in the professional sphere is widely recognized, identifying recent graduates with this skill has been challenging, as some exhibit traits of shyness and introversion, which can hinder their public communication (Marin et al., 2014).

Recruiters highly value oral and written communication skills, as shown by Miranda et al. (2017). However, there is a lack of professionals with communication skills, and Accounting students have not fully met employers' expectations in this regard, as pointed out by previous studies (Marin et al., 2014; Miranda et al., 2017).

Therefore, although oral and written communication are crucial for accounting professionals, a gap exists between the importance attributed to these skills and their actual effectiveness, suggesting the need for specific approaches in teaching to overcome these challenges. Additionally, the development of political skills in a professional environment is associated with increased opportunities for growth at work and higher levels of personal satisfaction (Almeida et al., 2023; Chen et al., 2021).

3. METHODS

3.1 Sample and Data Collection

The survey was conducted in September 2023 with students from the 1st to 8th semesters of the Accounting program at a federal public university located in the southern region of Brazil, who were exposed to a mandatory first-semester course in their curriculum aimed at developing students' communication skills at the beginning of the program. In addition to the theoretical content covered in class, students were evaluated through practical activities supervised by the instructor responsible for their training.

To achieve the course's objective of developing students' communicative capacity, its syllabus addressed not only technical aspects such as grammatical structure, spelling, and text construction mechanisms but also rhetorical strategies that aid in persuasion. Thus, the program content encompassed topics that may be related to Social Influence Theory (Levy et al., 1998) and students' levels of Political Skill (Ferris et al., 2005).

Of the 205 enrolled students, 132 responded to the survey. After data tabulation, it was found that of the 132 surveys completed, 131 were valid and suitable for analysis, while one survey was discarded due to being incomplete. Thus, the research covered 64% of the students regularly enrolled in the program.

To enhance data analysis, access to the respondent database from the study by Almeida et al. (2023) was obtained, enabling a comparison of results between the samples of both studies. The sample from Almeida et al. (2023) consisted of 133 students from the Accounting program at two educational institutions: one a public university maintained by the state government, and the other a private educational institution. Adding the sample collected for the present study to that of Almeida et al. (2023), a total of 264 Accounting students were included, all from educational institutions located in different regions of the same federal unit.

The differences between the sample of Almeida et al. (2023) and the one collected for this study are not only due to the nature of the educational institutions (i.e., state public and private versus federal public) but also to their exposure to a course focused on communication skills. Furthermore, Almeida et al. (2023) collected their data in March 2022, during a pandemic scenario with various imposed social distancing measures, while the data collection for this study was carried out in September 2023, when the end of the coronavirus pandemic had already been declared (World Health Organization [WHO], 2023).

Due to the aforementioned differences, statistical tests for data analysis were used, which are outlined below.

3.2 Research Instrument and Ethical and Methodological Concerns

The survey was structured into two sections: (i) Sociodemographic Characteristics and (ii) Political Skill Inventory. The first section covered demographic and academic data, such as gender, age, professional occupation, and semester of study in Accounting. This information enabled an understanding of the participants' profiles and informed the analysis. The second section measured students' political skill based on the inventory developed by Ferris et al. (2005), which consists of 18 items divided into four factors, and was answered on a seven-point Likert scale. The statements measured by the instrument are available in Table 1, along with the dimension to which they belong.

Table 1 - Section II – Political Skill Inventory

Factor	Code	Statement
Networking Ability (PSNET)	PSNET1	I spend a lot of time and effort at work networking with others.
	PSNET2	I am good at building relationships with influential people.
	PSNET3	I have developed a large network of colleagues and associates who I can call on for support when I really need to get things done.
	PSNET4	I know many important people and have good relationships with them.
	PSNET5	I spend a lot of time at work developing connections with others.
	PSNET6	I am good at using my network and connections to make things happen.
Interpersonal Influence (PSII)	PSII1	I am able to make most people feel comfortable and at ease around me.
	PSII2	I am able to communicate easily and effectively with others.
	PSII3	It is easy for me to develop good rapport with most people.
	PSII4	I am good at getting people to like me.
Social Astuteness (PSSA)	PSSA1	I understand people very well.
	PSSA2	I am particularly good at sensing the motivations and hidden agendas of others.
	PSSA3	I have good intuition or savvy about how to present myself to others.
	PSSA4	I always seem to instinctively know the right thing to say or do to influence others.
	PSSA5	I pay close attention to people's facial expressions.
Apparent Sincerity (PSAS)	PSAS1	When communicating with others, I try to be genuine in what I say and do.
	PSAS2	It is important that people believe that I am sincere in what I say and do.
	PSAS3	I try to show a genuine interest in other people.

Source: Adapted from Ferris et al. (2005).

The research instrument was evaluated by three professors from the Accounting program in a content analysis phase. After this phase, some adjustments to the wording of the items were made. Furthermore, an Informed Consent Form (ICF) was incorporated into the survey, ensuring anonymity and informing respondents of the research risks.

3.3 Data Analysis Techniques

Initially, a Confirmatory Factor Analysis (CFA) was performed to verify the internal structure of the research instrument, and the results confirmed the consistency of the factorial indicators (χ^2 (df) = 492.888 (129); $p < 0.001$; $\chi^2/df = 3.82$; CFI = 0.915; TLI = 0.899; NFI = 0.899; IFI = 0.916; GFI = 0.982; SRMR = 0.072; RMSEA (90% CI) = 0.019 [0.113–0.094]) (Kline, 2005; Hair Jr. et al., 2009; Marôco, 2014). The means for the networking factor (FPSNET), interpersonal influence factor (FPSII), social astuteness factor (FPSSA), and apparent sincerity factor (FPSAS) were calculated, enabling the operationalization of multivariate analyses.

Subsequently, both the individual statements and the factors had their normality assessed using the Kolmogorov-Smirnov test, which rejected the null hypothesis, indicating a non-normal distribution. Given this scenario, non-parametric tests were chosen to investigate disparities between groups.

For this purpose, the Mann-Whitney U (MW) and Kruskal-Wallis H (KW) tests were employed to identify statistical differences in the medians of the variables. The Mann-Whitney test was applied for comparisons between two groups, with significant differences concluded when the significance value (p) was less than 0.05. The Kruskal-Wallis test was used for analyses with more than two groups. In cases of statistically significant differences, Mann-Whitney post hoc tests with Bonferroni correction were conducted.

Furthermore, a correlation analysis was performed using Spearman's ρ coefficient to examine potential associations between the political skill factors.

4. RESULTS AND DISCUSSION

4.1 Sociodemographic Characterization

Respondents provided information about their sociodemographic profile regarding the gender they identify with, the year of study in the program, their employment status, and their age, which was later grouped into age ranges based on the sample quartiles. The information is presented in Table 2, separated according to the two data collections as well as the type of educational institution.

Table 2 - Respondents' Profile

Groupings	Federal Institution		State and Private Institution (Almeida et al, 2023)		Total	
	n	%	n	%	n	%
Gender						
Female	82	31,06%	72	27,27%	154	58,33%
Male	49	18,56%	61	23,11%	110	41,67%
Agender, non-binary and others	0	0%	0	0%	0	0%
Age*						
From 17 to 20 years old	50	18,94%	32	12,12%	82	31,06%
From 21 to 22 years old	33	12,50%	30	11,36%	63	23,86%
From 23 to 26 years old	24	9,09%	40	15,15%	64	24,24%
From 27 to 54 years old	24	9,09%	31	11,74%	55	20,83%
School Year						
First Year (Freshmen)	25	9,47%	29	10,98%	54	20,45%
Second Year	44	16,67%	20	7,58%	62	24,24%
Third Year	20	7,58%	54	20,45%	74	28,03%
Fourth Year (Seniors)	42	15,91%	30	11,36%	72	27,27%
Employment Situation						
Self-employed/Entrepreneur	7	2,65%	10	3,79%	17	6,44%
Public organization employee	7	2,65%	10	3,79%	17	6,44%
Private organization employee	97	36,74%	81	30,68%	178	67,42%
Mixed economy organization employee	1	0,38%	3	1,14%	4	1,52%
Internship	12	4,55%	16	6,06%	28	10,61%
No current employment	7	2,65%	13	4,92%	20	7,58%

Source: The authors (2024)

Note: The age bracket was based on the quartiles.

Analyzing both samples together, it is observed that the majority of students are female (58.33%), within the 17–20 age group (31.06%), predominantly in the third year of the Accounting program (28.03%), with most respondents reporting some type of employment relationship (92.42%), the majority of whom are employed in private-sector organizations (67.42%).

4.2 Multivariate Analysis

The potential differences in Political Skill statements according to sociodemographic variables, as well as exposure to a course focused on developing students' communication skills, were assessed. For this purpose, Mann-Whitney U (MW) tests were applied to independent variables with two groups, and the Kruskal-Wallis H (KW) test was used for variables with more than two groups. For the latter, the Mann-Whitney post hoc test with Bonferroni correction was conducted to identify between which groups significant differences occurred.

The results of the tests for the Gender variable (MW) and Age Range (KW) are presented in Table 3, along with the mean and median of each statement. Table 4 presents the results of the post hoc test.

Table 3 - Difference in Political Skill statements between gender and age range groupings

Groups	Gender			Age				
	Female	Male	p-value	17 to 20 y.o.	21 to 22 y.o.	23 to 26 y.o.	27 to 54 y.o.	p-value
Statements	Mean (Md)	Mean (Md)		Mean (Md)	Mean (Md)	Mean (Md)	Mean (Md)	
PSNET1	4,026 (4)	4,164 (4)	0,403	4,341 (4)	4,079 (4)	3,937 (4)	3,564 (4)	0,018
PSNET2	4,175 (4)	4,700 (5)	0,002	4,415 (4)	4,333 (5)	4,422 (4)	4,454 (5)	0,981
PSNET3	4,721 (5)	4,827 (5)	0,562	4,756 (5)	4,921 (5)	4,891 (5)	4,818 (5)	0,672
PSNET4	4,396 (4)	4,836 (5)	0,021	4,622 (5)	4,508 (5)	4,687 (5)	4,654 (5)	0,954
PSNET5	3,922 (4)	3,982 (4)	0,878	4,134 (4)	3,889 (4)	3,953 (4)	3,673 (4)	0,306
PSNET6	4,812 (5)	4,764 (5)	0,945	4,939 (5)	4,714 (5)	4,797 (5)	4,727 (5)	0,774
PSII1	5,351 (6)	5,300 (6)	0,94	5,378 (6)	5,381 (6)	5,547 (5,5)	5,364 (6)	0,755
PSII2	5,182 (5)	5,336 (6)	0,419	5,109 (5)	5,190 (5)	5,344 (6)	5,418 (6)	0,47
PSII3	5,039 (5)	5,318 (6)	0,117	5,085 (5)	5,238 (5)	5,203 (5)	5,164 (5)	0,947
PSII4	4,623 (5)	4,845 (5)	0,095	4,854 (5)	4,762 (5)	4,875 (5)	4,509 (4)	0,653
PSSA1	4,766 (5)	5,018 (5)	0,073	4,829 (5)	4,857 (5)	5,078 (5)	5,145 (5)	0,216
PSSA2	4,454 (5)	4,545 (5)	0,819	4,512 (5)	4,301 (4)	4,766 (5)	4,654 (5)	0,401
PSSA3	4,948 (5)	4,982 (5)	0,757	5,061 (5)	4,794 (5)	5,000 (5)	5,054 (5)	0,535
PSSA4	4,474 (4,5)	4,545 (5)	0,591	4,354 (4)	4,444 (4)	4,562 (5)	4,509 (4)	0,321
PSSA5	5,740 (6)	5,518 (6)	0,135	5,476 (6)	5,539 (6)	5,797 (6)	5,800 (6)	0,127
PSAS1	6,240 (6)	6,191 (6,5)	0,746	6,085 (6)	6,333 (7)	6,297 (7)	6,309 (6)	0,174
PSAS2	5,851 (6)	6,009 (6)	0,043	5,878 (6)	5,857 (6)	6,078 (6)	5,909 (6)	0,964
PSAS3	5,428 (6)	5,245 (5,5)	0,712	5,354 (6)	5,222 (5)	5,531 (6)	5,491 (6)	0,717

Source: The authors (2024)

Note: PSNET: Networking Ability; PSII: Interpersonal Influence; PSSA: Social Astuteness; PSAS: Apparent Sincerity; y.o.: years old; Md: Median

Table 4 - Bonferroni post-hoc test

Mann-Whitney test with Bonferroni correction	
Grouping	PSNET1
Age 17 to 20 years old x 27 to 54 years old	U = 39,443; p = 0,014

Source: The authors (2024)

Note: PSNET1: Statement 1 of Networking Ability.

It is highlighted that, for a significance level of 0.05, a statistically significant difference was found in three Political Skill statements for the Gender variable. Two were related to the respondents' Networking Ability (p-value PSNET2 = 0.002; p-value PSNET4 = 0.021), and one to their Apparent Sincerity (p-value PSAS2 = 0.043). Furthermore, when analyzing the mean and median of the statements that showed a significant difference, it can be observed that students who identify as male showed a higher level of agreement both for the Networking statements (Mean(Median) PSNET2 = 4.700(5); Mean(Median) PSNET4 = 4.836(5)) and for the Apparent Sincerity statement (Mean(Median) PSAS2 = 6.009(6)) when compared to female respondents (Mean(Median) PSNET2 = 4.175(4); Mean(Median) PSNET4 = 4.396(4); Mean(Median) PSAS2 = 5.851(6)).

The statements about Networking Ability that showed a significant difference are related to building and maintaining relationships with important and influential people (PSNET2: "I am good at building relationships with influential people."; PSNET4: "I know many important people and have good relationships with them."). The findings may indicate that accounting students who identify as male tend to have greater abilities to establish and maintain relationships with people who assign a higher degree of importance, such as superiors in the organization where they are employed, teachers at their educational institution, or individuals perceived to be in positions of higher social status.

The Apparent Sincerity statement is related to the opinion of third parties regarding the veracity of the respondents' statements (PSAS2: "It is important that people believe that I am sincere in what I say and do"). Therefore, the results indicate that male respondents tend to be more concerned with how others perceive their words and actions and whether their sincerity is believed.

Meanwhile, through the KW test performed for the different age ranges, a statistically significant difference was found for one Networking Ability statement (p-value PSNET1 = 0.018). The MW post hoc test with Bonferroni correction revealed that the difference occurred between the youngest age group (i.e., 17 to 20 years) and the oldest (i.e., 27 to 54 years) (U = 39,443; p-value = 0.014). It is noteworthy that the younger portion of the students showed higher levels of agreement (Mean(Median) PSNET1 = 4.341(4)) than students with greater seniority (Mean(Median) PSNET1 = 3.564(4)).

The statement that showed a significant difference between age groups is related to the intensity with which respondents seek to create relationship networks with third parties (PSNET1: "I spend a lot of time and effort at work networking with others"). This finding may be due to the fact that younger students are closer to the beginning of their academic, professional, and other life journeys, and therefore seek to create connections with peers and superiors. In contrast, older students have had more time to create, expand, and maintain their relationship networks, and thus may not allocate the same level of time and effort as younger students.

Table 5 presents the results of the difference tests for the statements according to the type of Higher Education Institution, obtained from the two different data collections, as well as the year the student is in the program. It is noteworthy that students from the second data collection, enrolled in the Federal Public Institution, were exposed to the mandatory communication course in the first semester, unlike the students from the first collection carried out by Almeida et al. (2023).

Table 5 - Difference in Political Skill statements between collection and year studied groupings.

Groups	Data Collection			School Year				
	State and Private HEIs	Federal HEI	p-value	1st	2nd	3rd	4th	p-value
Statements	Mean (Md)	Mean (Md)		Mean (Md)	Mean (Md)	Mean (Md)	Mean (Md)	
PSNET1	4,195 (4)	3,969 (4)	0,387	4,278 (4)	3,890 (4)	4,176 (4)	4,014 (4)	0,569
PSNET2	4,624 (5)	4,160 (4)	0,012	4,130 (4)	4,328 (5)	4,473 (5)	4,569 (4,5)	0,293
PSNET3	4,609 (5)	4,924 (5)	0,11	4,667 (5)	4,766 (5)	4,662 (5)	4,944 (5)	0,861

Groups	Data Collection			School Year				
	State and Private HEIs	Federal HEI	p-value	1st	2nd	3rd	4th	p-value
Statements	Mean (Md)	Mean (Md)		Mean (Md)	Mean (Md)	Mean (Md)	Mean (Md)	
PSNET4	4,722 (5)	4,435 (5)	0,119	4,352 (4)	4,500 (5)	4,594 (5)	4,805 (5)	0,391
PSNET5	4,007 (4)	3,885 (4)	0,598	3,833 (4)	3,812 (4)	4,013 (4)	4,083 (4)	0,641
PSNET6	4,865 (5)	4,717 (5)	0,445	4,796 (5)	4,625 (5)	4,649 (5)	5,083 (5)	0,236
PSII1	5,459 (6)	5,198 (5)	0,056	5,407 (6)	5,328 (6)	5,284 (6)	5,319 (6)	0,878
PSII2	5,383 (6)	5,107 (5)	0,166	5,241 (5)	5,094 (6)	5,270 (6)	5,361 (5)	0,927
PSII3	5,271 (6)	5,038 (5)	0,164	5,111 (5)	4,984 (5)	5,230 (6)	5,264 (5)	0,762
PSII4	4,774 (5)	4,656 (5)	0,442	4,667 (5)	4,750 (5)	4,716 (5)	4,722 (5)	0,978
PSSA1	5,030 (5)	4,710 (5)	0,065	4,833 (5)	5,000 (5)	4,743 (5)	4,917 (5)	0,57
PSSA2	4,677 (5)	4,305 (4)	0,031	4,833 (5)	4,547 (4)	4,365 (5)	4,319 (4)	0,121
PSSA3	5,165 (5)	4,756 (5)	0,013	5,130 (5)	4,703 (5)	5,027 (5)	5,000 (5)	0,637
PSSA4	4,654 (5)	4,351 (4)	0,047	4,592 (5)	4,203 (4)	4,392 (4)	4,819 (5)	0,098
PSSA5	5,834 (6)	5,458 (6)	0,022	5,611 (6)	5,469 (6)	5,66 (6)	5,819 (6)	0,294
PSAS1	6,203 (6)	6,237 (6)	0,83	6,241 (7)	6,281 (6)	6,243 (6)	6,125 (6)	0,731
PSAS2	5,955 (6)	5,878 (6)	0,747	5,778 (6)	6,031 (6)	5,892 (6)	5,944 (6)	0,777
PSAS3	5,353 (6)	5,351 (6)	0,776	5,167 (5)	5,531 (6)	5,243 (5)	5,444 (6)	0,514

Source: The authors (2024)

Note: PSNET: Networking Ability; PSII: Interpersonal Influence; PSSA: Social Astuteness; PSAS: Apparent Sincerity; Md: Median

When analyzing the variables according to the semester of study, no statistically significant difference was found for any of the statements related to Political Skill, indicating that the stage of the student's training does not significantly affect their ability to establish positive interpersonal relationships or influence the behavior of third parties.

However, when comparing one data collection to the other, a difference was observed for one statement related to the students' Networking Ability (p-value PSNET2 = 0.012), as well as four statements related to Social Astuteness (p-value PSSA2 = 0.031; p-value PSSA3 = 0.013; p-value PSSA4 = 0.047; p-value PSSA5 = 0.022). Students who were exposed to the Business Communication course showed lower levels of agreement in all statements that showed a significant difference (Mean(Median) PSNET2 = 4.160(4); Mean(Median) PSSA2 = 4.305(4); Mean(Median) PSSA3 = 4.756(5); Mean(Median) PSSA4 = 4.351(4); Mean(Median) PSSA5 = 5.458(6)) when compared to their counterparts (Mean(Me-

dian) PSNET2 = 4.624(5); Mean(Median) PSSA2 = 4.677(5); Mean(Median) PSSA3 = 5.165(5); Mean(Median) PSSA4 = 4.654(5); Mean(Median) PSSA5 = 5.834(6)).

Thus, students enrolled in the private or state public HEIs included in the study showed greater confidence in their skills related to building relationships with influential people, perceiving the expressions and motivations of third parties, and using intuition and judgment in how to interact and present themselves to others. It is noteworthy that this portion of the sample, in addition to not having taken a course focused on developing communication skills, also had their data collected during the coronavirus pandemic.

Therefore, the findings may indicate that exposure to the Business Communication course does not necessarily impact the development of higher Political Skills. Despite the guidelines of various regulatory bodies, such as the NEC and IPAE, emphasizing the development of oral and written communication in the training of accounting professionals (Lima et al., 2021), there may be factors related to the internal and external environments of university students' routines—outside the scope of the present study—that exert a greater influence on the formation of this competence, such as cultural aspects, the use of different active teaching methodologies, or the promotion of a more participatory and welcoming environment.

Similarly to the analyses performed for each statement, the differences in each dimension of Political Skill were also examined according to sociodemographic variables, using the factors obtained through the CFA. The results are presented in Table 6.

Table 6 - Difference in Political Skill factors between gender, age range, collection, and year studied groupings.

Groups	Gender			Age				
	Female	Male	p-value	17 to 20 y.o.	21 to 22 y.o.	23 to 26 y.o.	27 to 54 y.o.	p-value
Factor	Mean (Md)	Mean (Md)		Mean (Md)	Mean (Md)	Mean (Md)	Mean (Md)	
FPSNET	4,342 (4,333)	4,545 (4,667)	0,078	4,534 (4,5)	4,407 (4,5)	4,448 (4,5)	4,315 (4,333)	0,574
FPSII	5,049 (5,25)	5,200 (5,375)	0,255	5,107 (5,25)	5,143 (5,25)	5,242 (5,25)	5,114 (5,25)	0,999
FPSSA	4,877 (5)	4,922 (5)	0,776	4,846 (4,9)	4,787 (4,8)	5,041 (5)	5,033 (5,2)	0,386
FPSAS	5,840 (6)	5,815 (6)	0,716	5,772 (6)	5,804 (6)	5,969 (6)	5,903 (6)	0,657
Groups	Data Collection			School Year				
	State and Private HEIs	Federal HEI	p-value	1st	2nd	3rd	4th	p-value
Factor	Mean (Md)	Mean (Md)		Mean (Md)	Mean (Md)	Mean (Md)	Mean (Md)	
FPSNET	4,504 (4,5)	4,349 (4,333)	0,279	4,342 (4,25)	4,320 (4,333)	4,428 (4,5)	4,583 (4,5)	0,574
FPSII	5,222 (5,5)	5,000 (5,25)	0,089	5,106 (5,25)	5,039 (5,25)	5,125 (5,5)	5,167 (4,25)	0,953
FPSSA	5,072 (5,2)	4,716 (4,8)	0,009	5,000 (5)	4,784 (4,8)	4,838 (5)	4,975 (5)	0,496
FPSAS	5,837 (6)	5,822 (6)	0,794	5,728 (6)	5,948 (6)	5,793 (6)	5,838 (6)	0,731

Source: Dados da pesquisa (2024)

Note: FPSNET: Networking Ability Factor; FPSII: Interpersonal Influence Factor; FPSSA: Social Astuteness Factor; FPSAS: Apparent Sincerity Factor; Md: Median; y.o.: years old; HEI: Higher Education Institution

When analyzing the respondents' Political Skill at the factor level, no significant differences were found according to gender, age, or semester of study of the accounting students in any of the dimensions. Therefore, the findings may indicate that the stage of the student's course, as well as their age and gender, does not significantly affect their ability to influence third parties through persuasion, manipulation, or negotiation.

However, when directly comparing the sample from Almeida et al. (2023) with that collected for this study, a statistically significant difference was found for the Social Astuteness dimension (p -value FPSSA = 0.009). Students whose data were collected during the pandemic, in addition to not taking the Business Communication course, showed higher agreement in this factor (Mean(Median) FPSSA = 5.072(5.2)) when compared to those who were not in any form of social isolation and had taken a mandatory communication course (Mean(Median) FPSSA = 4.716(4.8)).

Ferris et al. (2005) conceptualize Social Astuteness as the individual's ability to pay attention to different behaviors, such as motivations and facial expressions, and to interpret them correctly. Furthermore, in the Brazilian accounting university context, a decline in students' social skills during the coronavirus pandemic was identified (Meurer & Rosário, 2024). Therefore, the difference found may stem from other aspects unique to the analyzed student groups, such as cultural factors.

Additionally, the correlations among the different dimensions of Political Skills, as well as their association with respondents' age, were examined. The findings are presented in Table 7.

Table 7 - Correlation Matrix of Political Skill factors

Variable		FPSNET	FPSII	FPSSA	FPSAS	AGE
FPSNET	Speaman's rho	-				
	p-value	-				
FPSII	Speaman's rho	0,652	-			
	p-value	<0,001	-			
FPSSA	Speaman's rho	0,588	0,603	-		
	p-value	<0,001	<0,001	-		
FPSAS	Speaman's rho	0,371	0,454	0,453	-	
	p-value	<0,001	<0,001	<0,001	-	
AGE	Speaman's rho	-0,077	0,024	0,044	0,073	-
	p-value	0,212	0,698	0,472	0,240	-

Source: Dados da pesquisa (2024)

Note: FPSNET: Networking Ability Factor; FPSII: Interpersonal Influence Factor; FPSSA: Social Astuteness Factor; FPSAS: Apparent Sincerity Factor.

When analyzing the correlations between the factors using Spearman's coefficient, the results indicated that all Political Skill dimensions were positively correlated with each other ($p < 0.001$), with correlations classified as strong (i.e., $\rho > 0.5$) and moderate (i.e., $\rho > 0.3$) (Cohen, 1992). Of the four dimensions analyzed, three showed strong correlations with each other, namely Interpersonal Influence, Networking Ability, and Social Astuteness ($\text{FPSII} \leftrightarrow \text{FPSNET}$ $\rho = 0.652$, $p < 0.001$; $\text{FPSSA} \leftrightarrow \text{FPSII}$ $\rho = 0.603$, $p < 0.001$; $\text{FPSNET} \leftrightarrow \text{FPSSA}$ $\rho = 0.588$, $p < 0.001$).

The Apparent Sincerity dimension, in turn, showed moderate positive correlations with the other three factors ($\text{FPSAS} \leftrightarrow \text{FPSNET}$ $\rho = 0.371$, $p < 0.001$; $\text{FPSAS} \leftrightarrow \text{FPSII}$ $\rho = 0.454$, $p < 0.001$; $\text{FPSAS} \leftrightarrow \text{FPSSA}$ $\rho = 0.453$, $p < 0.001$). These findings may indicate that the various dimensions of Political Skills are complementary, given that students who demonstrate high levels in one factor also tend to show high levels in the other factors, particularly in the dimensions of Networking Ability, Social Astuteness, and Interpersonal Influence.

However, when analyzing the correlation of the Political Skill factors with students' age, no significant correlation was found for any of the dimensions ($\rho < 0.1$; $p > 0.05$). Therefore, despite the difference tests indicating that younger students allocate more time to establishing contact networks, they do not necessarily exhibit greater abilities in this aspect, in observing the behavior of others, or in influencing them, nor do they appear to be more sincere.

In summary, male students demonstrated greater confidence in their abilities to establish and maintain relationships with important and influential people, and they attributed greater importance to the sincerity of their actions and words. Younger students, on the other hand, dedicated more effort and time to creating connections with third parties. However, the differences found for these statements were not observed at the factor level, except for Social Astuteness, for which students who did not improve their communication skills through a mandatory course in the Accounting program showed greater confidence in their ability to attend to different behaviors. In addition, the Political Skill dimensions were positively associated with each other.

Therefore, the development of business communication skills does not necessarily result in an improvement in students' Political Skills, possibly suggesting an area for enhancement in the course content to better leverage the skills addressed.

5 CONCLUSION

The present study aimed at identifying potential differences in the Political Skills of Accounting students based on exposure to the Business Communication course. Unexpectedly, students who did not take the analyzed course demonstrated greater capacities in attending to different behaviors of third parties, as represented by Social Astuteness, while no significant differences were observed between the two analyzed samples for the other three dimensions of Political Skills.

Regarding other sociodemographic variables, it was noted that younger students dedicate more time and effort to establishing new interpersonal relationship networks. Furthermore, male students demonstrated greater abilities to build and maintain relationships with important and influential individuals and placed greater importance on the credibility of their actions and words. The findings also indicated that the Political Skill dimensions are positively correlated with one another.

Courses aimed at developing soft skills, such as Business Communication, are highly relevant for training future accounting professionals, as they extend beyond technical accounting knowledge and play a notable role in the organizational environment. Regulatory bodies, such as the NEC and IPAE, also recognize the importance of interpersonal and communication skills and emphasize their development in their guidelines.

However, the study's findings suggest that, although students develop business communication skills through the course, their Political Skills still do not surpass those of students who did not take an equivalent subject. Therefore, a shift in the course focus towards using communication to establish relationship networks, convey sincerity in actions and words, and persuade third parties may enhance students' overall Political Skills, particularly considering the positive associations among the Political Skill dimensions. Maintaining this focus from the beginning of the course could contribute to students' performance in organizational contexts, such as internships and trainee programs.

The research was limited to analyzing the effect of exposure to the Business Communication course on respondents' Political Skills, making it difficult to identify other potential factors contributing to the unexpected findings. Furthermore, the final sample may have included first-semester students who, during data collection, were still enrolled in the analyzed course and had not yet completed it.

Nevertheless, this limitation can be addressed in future studies that explore additional variables potentially related to the Political Skills of Accounting students, such as students' beliefs in their own ability to achieve goals (i.e., self-efficacy) and to influence their behaviors, thoughts, and outcomes (i.e., perceived control).

Future research may also investigate how Political Skills affect different aspects of Accounting students' or professionals' lives, for instance, whether they contribute to satisfaction in the work environment.

Additionally, this study has theoretical implications, contributing to the accounting literature through the analysis of Political Skills in two distinct samples in relation to the development of business communication, thereby minimizing a research gap. Practical implications are also possible, as the findings provide HEI managers with information regarding the impact and effectiveness of communication courses in developing students' skills, in light of the need emphasized by the literature and regulatory bodies.

Moreover, accounting programs can foster the development of Political Skills through means beyond mandatory courses, by providing participatory environments and adopting active teaching methodologies, thereby promoting social interactions both among peers (i.e., students) and with superiors (i.e., teachers). The social implications include fostering discussions on the importance of skills beyond the technical ones expected from accounting professionals, which may influence other areas of an individual's life beyond academic and professional contexts.

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EARNINGS MANAGEMENT THROUGH DISCRETIONARY ACCRUALS IN BRAZILIAN STATES

GERENCIAMENTO DE RESULTADOS POR ACCRUALS DISCRICIONÁRIOS NOS ESTADOS BRASILEIROS

RESUMO

Este artigo teve como objetivo identificar o gerenciamento de resultados nos estados brasileiros após a adoção da contabilidade pelo regime de competência e implantação das IPSAS. Quanto ao período do estudo, foram considerados dez anos fiscais, iniciando em 2013 e findando em 2022. Para tanto, foram coletadas informações contábeis dos entes estaduais, tais como valores patrimoniais e financeiros. Foi utilizado os accruals discricionários como proxy do gerenciamento de resultado, na qual qualquer valor diferente de zero nos accruals discricionários já indica a existência de gerenciamento de resultados. O método quantitativo utilizado foi o modelo Jones Modificado que evidenciou valores de accruals discricionários. Como resultados, constatou-se que o gerenciamento de resultados nos entes estaduais é uma prática corriqueira e que as IPSAS, apesar da sua essência, não se mostra ser um fator inibidor da prática.

Palavras-chave: Gerenciamento de Resultados. Earnings Management. Accruals. Contabilidade Pública. Regime de Caixa.

ABSTRACT

This article aimed to identify earnings management in Brazilian states after adopting accrual accounting and implementing IPSAS. As for the study period, ten fiscal years were considered, starting in 2013 and ending in 2022. To this end, accounting information, such as asset and financial values, was collected from state entities. Discretionary accruals were used as a proxy for earnings management, in which any value other than zero in discretionary accruals already indicates the existence of earnings management. The quantitative method used was the Modified Jones model, which showed values of discretionary accruals. The results showed that earnings management in state entities is a common practice and that the IPSAS, despite their essence, do not prove to be a factor inhibiting the practice.

Keywords: Earnings Management. Accruals. Public Accounting. Cash basis.

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1 INTRODUCTION

The Brazilian public accounting system has evolved over the years. Until the late 1980s, accounting was characterized by its traditional nature and operated on a cash basis, meaning that information was only recorded when there was a financial movement. In other words, accounting information was not timely, resulting in a delay when it was released. In cash basis accounting, the primary concern of agents was to control budget execution and manage public resources (García, 2014).

In Brazil, Ordinance MF No. 184/2008 established that the National Treasury Secretariat and the Federal Accounting Council should standardize public accounting according to the International Federation of Accountants (IFAC). According to Aquino and Neves (2019), Ordinance 184/2008 announced that Brazil would adopt accounting standards following the International Public Sector Accounting Standards (IPSAS).

IPSAS utilizes accrual accounting as a standard because it has played a significant role in implementing and reformulating the financial apparatus of New Public Management (NPM), which began in Brazil around the 1990s. In NPM, the trend is to adopt accounting systems based on the accrual basis to achieve greater reliability (Christiaens et al., 2015). On an accrual basis, the financial event is recognized when the triggering event occurs, regardless of the financial aspect.

The Manual of Accounting Applied to the Public Sector (MCASP, 2021, p. 113) emphasizes that accounting information must be recorded regardless of budget execution to demonstrate the impact on public assets. In other words, the accrual basis of accounting aims to measure results in an economic sense, independent of financial expenditure. Although the cash and accrual bases will generate the same information in the long term, they produce differences in the short term (Colauto & Beuren, 2006).

However, the accrual scenario introduces subjectivity for managers, which can lead to biased adjustments in the financial statements (Martinez, 2008). These adjustments may be classified as Earnings Management (EM) when made discretionary, that is, when executed intentionally. One factor associated with earnings management is the quality of accounting information (Martinez, 2008).

There are two methods for managing earnings: the first is based on accruals, and the second is through operational activities (Gunny, 2005; Sibim et al., 2021). This research uses accruals to demonstrate EM. It should be noted that earnings management may not necessarily relate to fraudulent accounting since management occurs with the support of accounting standards. In contrast, fraudulent accounting occurs outside of accounting practices (Martinez, 2013). However, it is assumed that earnings management and fraudulent accounting have a very unclear boundary since both practices aim to alter accounting information (Martinez, 2013).

Studies on EM have gained notoriety over the years due to their direct impact on the quality of accounting information managers disclose. The first authors to explore this topic were Healy (1985), Schipper (1989), and Jones (1991). In Brazil, research began in 2001 with Antônio Lopo Martinez. However, studies on earnings management have primarily focused on the private sector (Morais & Macedo, 2021).

The public agent can also manage results to generate interest or influence perceptions in the public sphere. Cardoso and Fajardo (2014, p. 13) stated that the “use of EM is the existence of fiscal and budgetary rules that prevent spending that exceeds a target (or limit) defined by an external body or a higher body in the government hierarchy.” Another point of interest regarding the influence of accounting information may be on individuals, such as politicians, given that EM can become a significant ally in reelection or maintaining a party in power (Buti et al., 2007).

The literature addresses that several countries, in their respective public entities, manage results through accruals with various objectives, such as hiding deficits (Von Hagen & Wolff, 2006; Ding et al., 2018), through discretionary provisions to achieve financial balance (Ballantine et al., 2007; Baker et al., 2019), aiming at political reelection (Costa & Leão, 2021; Ferreira, 2023).

Based on the above and considering that Brazil provides a conducive environment for results management by public entities, this study poses the following guiding question: What is the behavior of discretionary accruals in Brazilian states and the Federal District? Specifically, this study aims to analyze the existence of earnings management under the adoption of IPSAS in the Brazilian states and the Federal District. With ten years of research, it will be possible to determine whether earnings management exists, occurs frequently, or is merely an isolated event.

The justification for this research is that most of the work on EM focuses on the private sector (Morais & Macedo, 2021). In general, the results on earnings management in the private sector emphasize the distortion of accounting quality (Menicucci, 2020). Given the volume of empirical data available, research on EM in public entities still has much to explore (Pilcher & Van Der Zhan, 2012). The published work on earnings management in the public context relates it to the political cycle, highlighting the disclosure of results around zero or based on the accrual basis (Akhmedov & Zhuravskaya, 2004; Ferreira et al., 2013; Costa & Leão, 2021).

This study differs from others by considering electoral cycles and breakeven disclosure, among other previously studied reasons, investigating accruals over ten years, and analyzing whether earnings management is achieved through the implementation of IPSAS. Therefore, this study will cover the behavior of all Brazilian states and the Federal District.

The contribution of this research is notable because there is a lack of studies that have proposed to work with a large state sample while covering Brazil. Most research on earnings management focuses on countries such as China, the United States of America, Australia, and the United Kingdom (Ahmad et al., 2023). Thus, the present study adds to the

academic literature. Another contributing factor is that, based on the results obtained, it will be possible to understand the quality of the accounting information issued by Brazilian state units.

Among the results found, earnings management by state units is commonplace. In all the years researched, there was an alternation between positive and negative discretionary accruals, indicating the compensation of these discretionary accruals in future periods. Another factor found is that IPSAS did not prove to be an inhibitor of earnings management by the public manager.

This research is relevant because it covers Brazil as a whole; that is, the information generated from the research results may interest citizens, municipal, state, and federal governments, accounting professionals, and public managers. Analyzing the quality of the accounting information disclosed by government entities will be possible based on the results obtained. Furthermore, no Brazilian research has proposed studying earnings management in the states and the Federal District for over ten years. Therefore, this study makes a rich contribution to the academic literature.

2 THEORETICAL FRAMEWORK

2.1 Results Management

Earnings management is an accounting field that may aim to manage (or manipulate) the accounting results to align with the interests of those who provide it, potentially distorting information for users. This subject gained relevance from seminal works such as Schipper (1989), Healy and Wahlen (1999), Jones (1991), and Dechow et al. (1995). EM can be summarized as managers who hold accounting information, opting for personal judgment in preparing accounting documents to distort reality before stakeholders (Christensen et al., 2022).

The motivation for such actions can be characterized by agency theory, in which the manager acts self-interestedly, seeking some benefit (Stalebrink, 2002). The agency problem's theoretical lens assumes conflicts when the state (agent) and the stakeholders (principal) are no longer aligned with each other's interests. According to Jensen and Meckling (1976), the agent and the principal seek to maximize their participation; each party focuses on its interest. A dogma about agency theory refers to the information asymmetry between the agent and the principal, where the agent is motivated to satisfy his or her interest. The stronger the personal interest on the part of the agent, the greater the degree of management based on accruals (Vansant, 2016).

They can also be characterized by public choice theory (Cohen et al., 2019), where individuals are maximizers, selfish, and rational. Scott (2006, p. 344) states that "earnings management is the choice by a manager of accounting policy to achieve some specific objectives." One of the foundations of public choice theory is understanding why managers act in specific ways. Buchanan (2009) showed that public choice theory aims to understand how public agencies operate while observing the behavior of the principals; that is, it evaluates the relationship between individuals and the outcomes. Boyne (1997) points to the "doctrine of private interest," where politicians (agents) prioritize their interests over those of the public (principal).

Earnings management can be used for quite diverse purposes. In the public sector, administrators are tasked with appropriately managing public funds. This responsibility entails being accountable to stakeholders such as taxpayers, the media, voters, and investors (Cardoso & Fajardo, 2014). Consequently, public administrators turn to EM with the intention of either avoiding or limiting accountability.

Confirming the objective of earnings management by managers in the public sector, Ferreira et al. (2013) demonstrated that during pre-election periods in Portugal, political managers manipulated negative results, transforming them into positive ones to convey to the population the idea of efficient public management. Similarly, Greenwood and Tao (2020) observed earnings management in public universities in the United Kingdom. Capalbo et al. (2021) investigated the practice of earnings management in Italian state-owned companies. In turn, Cohen and Malkogianni (2021) and Ferreira (2023) analyzed how earnings management is utilized in the indebtedness of public entities.

It is worth mentioning that EM can create issues regarding transparency, quality, and accountability, leading to a mismatch between IPSAS proposals and the accrual basis. Silva et al. (2014, p. 269) state that "the opportunistic behavior of managers can negatively affect the quality of accounting information disclosed to external users."

2.2 Accruals and IPSAS in the Public Sector

Regarding earnings management, accruals are noteworthy. Fuji and Carvalho (2005, p. 6) point out that accruals represent the difference between net income and operating cash flow. According to Martinez (2008), accruals are accounting accumulations that do not involve any financial movement. For Dantas et al. (2013), accruals are based on income statements that directly affect the financial result (surplus/deficit) but do not necessarily involve financial resources. In other words, accruals can be determined by the discrepancies between the accounting information in the tax documents and the entity's actual situation.

It is important to emphasize that simply identifying accruals does not indicate EM, as accruals consist of both non-manageable and manageable components. Accruals can be categorized as non-discretionary and discretionary (Erfurth & Bezerra, 2013). Discretionary Accruals (DA) are intended to manage results and can be either positive or

negative, depending on the public administrator's intention. However, discretionary accounting choices can distort information in the financial statements (Menicucci, 2020).

Regarding accruals and EM in the public sector, it is noted that managers use accounting maneuvers to serve personal interests, for instance, in political environments where accounting information for voters becomes a "channel," an ally in the search for electoral success (Baber & Sem, 1986; Stalebrink, 2002; Ferreira et al., 2013; Costa & Leão, 2021).

This can be explained by agency theory and public choice theory. Both theories address the behavior of those who possess information and how that information is utilized.

However, one cannot generalize the accrual basis with EM, as it follows the logic of accounting practices. In this scenario, IPSAS is mentioned. IPSASs are accounting pronouncements that provide guidelines on preparing accounting information from the public perspective. The convergence of accounting information breaks the borders between countries, as IPSAS brings uniformity to accounting information worldwide (Lemes & Carvalho, 2010).

IPSAS has developed as a trend in public administration, seen as an element of public sector development converging towards global accounting (Oshiole, 2022). Implementing new accounting standards stems from a movement to provide public administration with a serious, less bureaucratic, and more efficient management language (Cohen & Malkogianni, 2021). Agostinho et al. (2001) reiterate that if countries experience public economic events of the exact nature, that is, uniform economic and financial factors, the accounting statements must adhere to an international standard to serve users globally. In public accounting, transparency is closely linked to the adoption of standards (IPSASB, 2016).

Regarding the logic of IPSAS and the accrual basis, their adoption brought the justification that by using them, public entities can provide more precise and transparent information (Pina & Torres, 2003). Literature indicates that accounting effectively adopts the accrual basis (Cohen, 2012; Schmidhuber et al., 2022). Adopting IPSAS based on the accrual basis improves the quality of government reports across several dimensions, such as understandability, comparability, and consistency (IPSASB, 2016). Higher quality accounting aids policymakers in conducting fiscal actions transparently, showcasing public governance practices, reducing abuse of power, and protecting government assets (Cicatiello et al., 2017; Eigenstuhler et al., 2023).

The advent of accrual accounting brought about more timely information and improved accountability (Lampe et al., 2015). However, even with the adoption of IPSAS, managing results in public entities was not eliminated (Pilcher & Van Der Zahn, 2010). Accounting is believed to be utilized through EM, particularly in public bodies, to manipulate or persuade society. Studies indicate that the practice of Earnings Management can be observed in the public sector on a global scale (Bisogno & Donatella, 2021).

Therefore, this study has the following research hypotheses:

H₁: Even with the adoption of IPSAS, earnings management in Brazilian states still occurs through discretionary accruals.

3 METHODOLOGICAL PROCEDURES

3.1 Sample and Data

This research aims to analyze the existence of earnings management under the adoption of IPSAS in the Brazilian states and the Federal District. To this end, the modified Jones model of Dechow et al. (1995) was selected to measure EM and detect Discretionary Accruals (DA).

This study's sample includes all Brazilian states and the Federal District. Given the number of state entities, a heterogeneity of results is anticipated. The research period spans the years 2013 to 2022.

Data was collected from the Brazilian Public Sector Accounting and Tax Information System (SICONFI) website to achieve this. The data encompasses values for total assets, current assets, cash and cash equivalents, short-term receivables, current liabilities, non-current liabilities, short-term loans and financing, depreciation, fixed assets, current revenue, and other current expenses.

3.2 Calculation of Discretionary Accruals

The main variable of this study is the amount of discretionary accruals. The model used for this measurement is the Jones model (1991), modified by Dechow et al. (1995). This model uses net revenues and fixed asset values variations, assuming that non-discretionary accruals depend on these variables (Ramos & Martinez, 2006). Another critical point is that the model aims to improve the measurement of discretionary accruals (Beck, 2018). Examples of studies that have used the Modified Jones model as a theoretical lens include Ballantine (2007), Pina et al. (2012), and Beladi et al. (2020), among others. The tests were operationalized using Eviews software, version 8.1.

Measuring total accruals is necessary for calculating DA and identifying management results. The Modified Jones model (1995) was used to compute total accruals. The formulas for these operationalizations are presented below:

$$TA_{i,t} = [(\Delta AC - \Delta DISP_{i,t}) - (\Delta PC_{i,t} - \Delta DIV) - DEP_{i,t}] \quad (1)$$

Where: TA represents the total accruals of States i in fiscal year t ; ΔAC is the variation in the State's current assets i between the period t e $t-1$; $\Delta DISP_{i,t}$ refers to the variation in the State's available resources i between period t ; ΔDIV presents the variation in the short-term loans and financing account of State i between period t and $t-1$; ΔPC is the variation in the current liabilities of State i between period t and $t-1$; e $DEP_{i,t}$ represents the expenses related to depreciation, amortization, and depletion recorded in the State i in the period t .

In addition to DA, non-discretionary accruals (NDA) were measured for each state and over time. To this end, the following regression was applied:

$$TA_{i,t} = \alpha_1 \left(\frac{1}{A_{i,t}} \right) + \beta_1 (\Delta REV_{i,t} - \Delta REC_{i,t}) + \beta_2 (PPE_{i,t}) + \varepsilon_{i,t} \quad (2)$$

In which: $A_{i,t}$ represents the total assets of State i in period $t-1$; ΔREV are the gross revenues obtained by state i in period $t-1$, gradually scaled by the total assets of the state in year t ; ΔREC shows the short-term receivables of state i in year t minus the short-term receivables in year $t-1$; and $PPE_{i,t}$ represent the fixed assets of state i in period t .

As an example of the process of measuring non-discretionary accruals, the calculation for measuring NDAs is shown below:

$$NDA_{i,t} = Total\ of\ Accruals_{i,t} - DA_{i,t} \quad (3)$$

Where: $AND_{i,t}$ represents the total non-discretionary accruals (non-manageable portion); $Total\ of\ Accruals_{i,t}$ refers to the total number of accruals and $DA_{i,t}$ represents the discretionary accruals (manageable portion).

Once the DA and NDA were determined, the analyses were conducted temporally and by region. As Martinez (2008) states, when the DA is different from zero, there is already evidence of EM.

4 RESULTS AND DISCUSSIONS

This topic presents the results of the tests performed and includes discussions. Initially, the descriptive analysis of the research variables related to calculating total accruals is presented (Table 1).

Table 1 - Variables for calculating total accruals

Variables	Average	Median	Standard Deviation	Maximum	Minimum	N. Obs.
TA	-0,1348	-0,1261	0,1273	0,4991	-0,7156	243
AC	1,3200	7,2700	1,8300	1,4100	8,3200	270
DISPON	5,9000	3,1700	8,7200	8,1900	2,7800	270
PC	8,6200	2,5100	1,5500	9,9000	1,2400	270
EMPF	2,3500	4,3900	5,9500	3,8900	-3,4700	221
DEP	1,0700	1,900	2,1700	1,6200	0,0000	232

Source: Prepared by the authors.

Regarding the TA variable, it was noted that, on average, the values are negative; current liabilities and depreciation represent assets in the study sample. This can be explained by the fact that each state has its economic particularity, and in most entities, the operations of obligations seem to exceed current assets and cash. In other words, this demonstrates that the public entity, even though it does not focus on generating an accounting surplus, is obliged to meet the community's needs, ensuring the maintenance and provision of public services – which can lead to raising resources through third parties and utilizing cash (Lima; Diniz, 2016).

The variable of cash and cash equivalents explains the immediate financial capacity of the sample. Thus, entities can manage the accounting result from cash since accruals arise when there is a temporal discrepancy between cash flows and the moment of accounting recognition of the transaction (Ronen & Yaari, 2008).

The average current liabilities (CL) variable had the highest value. CL refers to the entity's short-term debt level. According to MCASP (2022, p.163), liabilities are "a present obligation, derived from a past event, the extinction of which should result in the outflow of resources from the entity." In other words, the total accruals derived from CL are debts incurred in the past to maintain the entity's operations. For example, the state may have taken out a loan to ensure the payment of employees' salaries, but in return, there was no financial expenditure. Consequently, this generates accruals, which explains the more negative average of the TA.

In turn, the depreciation variable draws attention because it has a minimum value of zero. This is because some states did not disclose the depreciated values (or did not carry out this accounting process), such as Amapá, Goiás, and Piauí. The method of choosing depreciation, especially in the public sector, is a topic that still raises doubts among managers. Delazare et al. (2010) pointed out that the information produced in the choice of depreciation calculations can be considered one of the uncertainty factors since it is an estimate that tends to vary according to the method chosen by the body, which can significantly affect the decision-making of its managers.

Table 2 presents the variables that help explain the non-discretionary accruals from the total accruals. This model's error points to the managerial aspect of the TA, specifically the discretionary accruals.

Table 2 - Variables of the discretionary accruals model

Variables	Average	Median	Standard Deviation	Maximum	Minimum	N. Obs.
1/AT	0,0000	0,0000	0,0000	0,0000	0,0000	270
REC_CRED	0,0638	0,0593	0,1026	0,7174	-0,5403	270
PPE	0,3406	0,3170	0,1660	0,8741	0,0000	270

Source: Prepared by the authors.

The variable 1/AT is present primarily to control the sample size and prevent biases in operationalization.

The REC_CRED variable presented the highest mean and median values. This variable refers to the amounts public entities collect from the state's revenue. These values differ between states, demonstrating each state's capacity for collection, including the receipt of intergovernmental transfers.

Regarding the PPE variable, the average values are representative, demonstrating the structural capacity of the states. However, there were zero values, not due to a lack of data but due to non-accounting practices. Fixed asset accounting in the public sector is dubious (Delazare et al., 2010), leaving room for opaque information. Public entities have exhibited deficiencies in managing and disclosing their assets in the financial statements.

The correlation of these variables in Table 2 (non-tabulated data) was carried out, and no evidence of multicollinearity was found. Table 3 discusses the results of the states' discretionary accruals determined in the operationalized regression error.

Table 3 – OLS model and types of accruals

Panel A - OLS Model		
Variables	Coefficients	t
1/AT	-1,2900	-0,6991
REC_CRED	-0,7987	-16,746***
PPE	-0,0115	-0,2108
Constant	-0,0671	-2,8217***
N. Obs.	243	
Effects	Random, robust with White	
Dependent Var.	TA	

Panel B - Types of Accruals for the Models	
Mean/Median	OLS
DA	0,0000/0,0059
NDA	-0,1348 /-0,1328
Maximum/Minimum	OLS
DA	0,2422/-0,3034
NDA	0,3594/-0,6445
Standard Deviation	OLS
DA	0,09400
NDA	0,08540
N. Obs. OLS	243
N. Obs. OLS	189

DA: Discretionary Accruals. NDA: Non-Discretionary Accruals. Source: Prepared by the authors.

As shown in Panel A of Table 3, the OLS linear regression model was developed for the discretionary accrual variables, with total accruals as the dependent variable. Only the REC_CRED variable was significant. The regression error represents the discretionary accruals that are the focus of this research (Panel B – Table 3).

Based on the average and median values of the DA, a tendency for the managed part in the accounting statements to be positive was observed; this may indicate that state public managers prefer positive accumulations to enhance accounting data. Another contributing factor to such a result could be improving the fiscal consequence for a given period. This aligns with prior studies, including those by Ballantine et al. (2007), Pina et al. (2012), and Ferreira (2023).

Such accounting maneuvers by public managers may create the impression of efficient management and influence societal perceptions. Merkl-Davies and Brennan (2007) indicate that managers follow two types of behavior to manage impressions: the first involves hiding negative results, and the second involves extolling positive results. Another noteworthy point is DA's maximum and minimum values, which are higher than the mean and median. As observed, the maximum value represented 0.2422, and the minimum value was -0.3034.

Negative discretionary accruals may indicate the reversal of positive discretionary accruals, as it is a natural process. The negative value can also be used in the final deficit or surplus result. For example, an increase in deficit through discretionary accruals in a given year may relate to the disclosure of a positive result in future and timely periods for managers. As the literature points out, public managers are more inclined not to disclose negative results in election years to maintain their position, leading to the disclosure of managed results being postponed to conventional periods. Previous research confirms this tendency among managers, such as Akhmedov and Zhuravskaya (2004), Silva and Freire (2021), Araújo et al. (2023), and Ferreira (2023).

It is also mentioned that the manager of the public entity can manage the information based on the DA so that the fiscal result is close to zero, as evidenced by Drew (2018). This fact can be interpreted in different ways depending on the economic situation. To illustrate, Ferreira et al. (2013) studied the EM in Portugal and found that public entities disclose results close to zero to demonstrate financial balance. This possibility was also researched by Costa and Leão (2021), where the researchers evidenced the practice of zero to zero in Brazilian municipalities, especially during election periods. The explanation for this is that the public sector, unlike the private entity, does not have as its essence to generate surpluses but rather to maintain fiscal balance; thus, the disclosure of positive results leaves room for society to interpret this as a fiscal overload. On the other hand, the disclosure of a negative fiscal result can set precedents for questioning the public manager.

As observed in Panel B of Table 3 and Table 4, the managed values alternated between positive and negative. One factor that may explain this is the political polarization that Brazil has been experiencing since 2014, or the accounting compensation carried out by public managers depending on their interests. For example, the accounting disclosure of a poor result may lead to losing a political mandate—not immediately, but eventually. This factor aligns with previously published works, such as that of Ferreira et al. (2013), who investigated Portuguese municipalities and found that public managers engage in earnings management (EM) to avoid presenting deficits in election years. They also noted less inclination to disclose deficits in environments of intense political competition. The research by Donatella (2019) examined whether political competition is a driver of EM in Swedish municipalities. The author reports that accounting information is managed to be presented to voters in a more positive light during election periods, especially in financial reports.

Costa and Leão (2021) are also cited as a complement. They investigated the practice of EM in Brazilian municipalities during election periods and concluded that there is a strong relationship between the manageable part of accruals and the probability of municipalities presenting small surpluses.

Table 4 - Annual averages of variables

Annual averages of variables			
Years	TA	DA	NDA
2013	*	*	*
2014	-0,0947	0,0358	-0,1305
2015	-0,1786	-0,0351	-0,1197
2016	-0,1014	0,0192	-0,1207
2017	-0,1714	-0,0536	-0,1177
2018	-0,1341	-0,0113	-0,1227
2019	-0,1008	0,0277	-0,1285
2020	-0,1224	0,0069	-0,1293
2021	-0,1522	0,0196	-0,1718
2022	-0,1579	-0,0092	-0,1486

Source: Prepared by the authors.

According to Table 4, it should be added that discretionary accruals were used as a control instrument, both to reduce the deficit when TA is negative and DA is positive, and to “generate” even more deficit when TA is negative and DA is also negative. Approximately 66.66% of DA were positive, and 44.44% were negative. Another significant point is that the big bath (Stalebrink, 2007) was not evident when managers disclosed a large deficit to report positive values in opportune periods. This finding aligns with the research by Baldissera et al. (2020).

The mean and median are expressed as negative values regarding the NDA values. In other words, Brazilian states tend to have deficits. Due to the fiscal federalism model established in Brazil, most states cannot sustain themselves solely through their revenues, contributing to significant tax competition concerning the ICMS (the main state tax) to increase revenue and reduce deficits.

Corroborating the paragraph above, a 2019 fiscal monitoring report by the Independent Fiscal Institution (IFI) highlighted issues with the payment capacity of Brazilian states. Of the 26 states and the Federal District, 16 indicated that their payment capacity was compromised, including Minas Gerais, Rio de Janeiro, and Rio Grande do Sul. Notably, these states are located in the country's wealthiest regions. Another critical point is that these three states have more expenses than current revenues.

In addition, the values of TA, DA, and NDA were consolidated, along with the regions that make up Brazil (not tabulated). It was noted that both total and non-discretionary accruals indicate negative values. Consequently, it can be concluded that, in most cases, the states of all regions report accounting deficits.

Furthermore, it is evident how each region manages discretionary values. For example, the Northeast region worked with DAs, presenting them as negative values, while the values managed in the Southeast region were positive. Given each region's heterogeneity and economic specificity, it is assumed that the values were managed to meet each region's particularities.

Finally, based on the findings of this research, we conclude that earnings management is present in the states and the Federal District. As Martinez (2008) mentions, any value of discretionary accruals other than zero already indicates the occurrence of earnings management.

The existence of EM confirms that managers and their technical structures can use the discretion of information to modify or generate impressions in public accounts. This scenario is explained by information asymmetry and accounting choices (Agency Theory and Public Choice Theory) to meet personal or professional desires – such as political image, maintaining power, or reelection of a candidate from the same party – as also noted in research by Stalebrink (2002); Buchanan (2009); Ferreira et al. (2013); Baldissera et al. (2020), and Costa and Leão (2021).

5 FINAL CONSIDERATIONS

The present study analyzed earnings management after adopting IPSAS in Brazilian states and the Federal District. The results provided evidence of earnings management through discretionary accruals in the study sample across all years researched. The findings indicate that accruals may have been utilized to manage perceptions, aiming to emphasize information favorable to managers or the public entity's situation. Furthermore, management occurs and continues during elections, which is common for politicians to bolster their societal position.

Furthermore, adopting IPSAS has not been shown to inhibit EM practices. A factor closely associated with this is that IPSAS considers accounting on an accrual basis, allowing public managers to manage accounting results for various purposes continually. IPSAS is contradictory to EM; on one hand, it can generate information quality with greater detail, but on the other hand, it can induce practices of individual interest or even the use of accruals, which, due to a lack of knowledge, can lead to a distorted accounting system.

There is still debate about whether the practice of EM oscillated between positive and negative values. This indicates that amounts managed in one year tend to be reversed the following year, generating the “accrual reversal” process. Likewise, 2014, 2020, and 2021 share two common characteristics: they were years of crisis, and the values of discretionary accruals were utilized positively. Since these were periods in which the financial situation of public entities was compromised, especially during the COVID-19 health crisis, it is assumed that managers opted to manage the values to reduce the deficit presented, since the unmanageable part was negative.

This study found that state public managers frequently utilize results management. The reasons for these practices vary, from personal to political motivations and impression management.

This study contributes to filling the gap in the literature, as much of it investigates the management of accounting results in the private sector. Consequently, few studies focus on the public sector, particularly in Brazil. This research enhances the academic community’s understanding of results management by the states and the Federal District over ten years, encompassing years of health, economic, and political crises, thus setting itself apart from other studies in the public sector. The perception is that this management may be driven by political reasons, image concerns, or the desire to demonstrate positive results.

A limitation of this study is that Brazilian public accounting remains a field with certain opacities, despite the presence of IPSAS guidelines, such as the accounting treatment of fixed assets. Another factor contributing to the limitations of this research is the exclusion of 2013 due to a lack of data provided by the states, which reduced the number of observations.

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ONCE UPON A TIME...THE CONSTITUTION OF NUBANK'S INTELLECTUAL CAPITAL THROUGH CUSTOMER CENTRICITY VALUES AND STRATEGIES

ERA UMA VEZ... A CONSTITUIÇÃO DO CAPITAL INTELECTUAL DO NUBANK POR MEIO DE VALORES E ESTRATÉGIAS DE CENTRALIDADE NO CLIENTE

ABSTRACT

This study aimed to analyze how Nubank constitutes intellectual capital through a disruptive and customer-centric business narrative. For this purpose, a qualitative study was conducted through the analysis of narratives in documentary sources. Data analysis was supported by open, axial, and selective coding. The research findings show that the company's core value, customer centricity, considered a cultural managerial control, underpins the company's IC across three interconnected dimensions. Human capital encompasses the composition of a diverse and inclusive team, whose alignment with the company's mission and values is crucial for meeting the varied demands of customers. Structural capital, in turn, is composed of proprietary technology, a robust product platform, and internal procedures that enable human capital to develop strong relationships with customers. Finally, relational capital emphasizes customer service through intuitive experiences and efficient products, in addition to managing the external communication between human capital and users. The company's customer centricity also directs the decision-making process, supports organizational culture, people's actions and other organizational aspects. We concluded that the intellectual capital created from a customer-centric culture shapes managerial and organizational aspects, as operations, product and technology development, and management are based on customer centricity.

Keywords: Intellectual Capital; Customer centricity; Narrative Analysis; Disruptive business.

RESUMO

Este estudo teve como objetivo analisar como o Nubank constitui capital intelectual (CI) por meio de uma narrativa de negócio disruptivo e centrado no cliente. Para isso, foi realizada uma pesquisa qualitativa por meio da análise de narrativas em fontes documentais. A análise dos dados foi apoiada pelas codificações aberta, axial e seletiva. Os resultados da pesquisa evidenciam que o principal valor da empresa, a centralidade no cliente, considerado um controle gerencial cultural, fundamenta o CI da companhia em três dimensões interligadas. O capital humano engloba a composição de uma equipe diversificada e inclusiva, cujo alinhamento com a missão e os valores da empresa é crucial para atender às variadas demandas dos clientes. O capital estrutural, por sua vez, é composto por tecnologia proprietária, uma plataforma de produtos robusta e procedimentos internos que capacitam o capital humano a desenvolver relações sólidas com os clientes. Por fim, o capital relacional enfatiza o atendimento ao cliente por meio de experiências intuitivas e produtos eficientes, além de gerir a comunicação externa entre o capital humano e os usuários. A centralidade no cliente da companhia também direciona o processo de tomada de decisão, sustenta a cultura organizacional, a atuação das pessoas e outros aspectos organizacionais. Conclui-se que o capital intelectual constituído a partir de uma cultura centrada no cliente molda aspectos gerenciais e organizacionais, pois as operações, o desenvolvimento de produtos, tecnologias e a gestão são pautados com foco no cliente.

Palavras-chave: Capital intelectual; Centralidade no cliente; Análise de Narrativas; Negócio disruptivo.

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1. INTRODUCTION

The Brazilian banking sector has historically been dominated by five major financial institutions, characterized by a combination of high margins of return, product and service offerings, and inadequate customer service – a characteristic incompatible with customer needs (Partyka et al., 2019). Therefore, complaints are a hallmark of the services provided by these dominant banks, according to periodic surveys by the Central Bank ([BACEN], 2024). On the other hand, financial sector startups, known as fintech have emerged employing technology and promising a customer-centric approach, aiming to break the paradigm of traditional banks (Walker, 2014; Arner et al., 2015).

Fintech companies massively use digital technologies as a foundation for their existence, not just as a tool (Braido et al., 2020). Digital banks are distinguished by their convenience and customer focus, as their systems are not legacy. This allows for greater structural flexibility and facilitates innovation, unlike traditional banks (Silva et al., 2020). They also tend to specialize in specific market niches and have leaner cost structures (Caciatori & Cherobim, 2021). This configuration would enable operational leverage, increasing the number of customers served with a proportionally smaller variation in operating costs.

Thus, the use of technology favors customer relationships and promotes market differentiation (Vasques, 2007). Customer centricity can generate shared value between the customer and the company, through the quality of services, customer-oriented service, product innovation and, at the same time, low friction of use and security, which can result in financial and non-financial results (Damázio et al., 2020).

The fintech Nubank stands out, with over one hundred million customers in Latin America, and operations in Brazil, Mexico, and Colombia. Nubank was founded in 2013 to combine low costs, quality products and processes, efficiency, and value co-creation management based on the shared experience between users and financial agents (Rosa et al., 2017). The company's business model, organizational culture, and product and service development are geared toward agile and intuitive communication with customers, prioritizing them. In addition, with its IPO in December 2021, this proposal was further enhanced by the challenge of generating economic value for its shareholders through this customer-centric approach.

Customer relationships can be understood as one of the components of a company's intellectual capital (IC). Intellectual capital has three interdependent dimensions: human capital (HC), structural capital (SC), and relational capital (RC), which includes customers (Bontis, 1998). Thus, customer centricity is a relevant aspect for generating intellectual capital and is a fundamental practice in fintech, as customer focus favors the formation of intellectual capital in its three dimensions.

In the literature on intellectual capital, there is a concentration of conceptual and bibliographical research (Edvinsson & Sullivan, 1996; Bontis, 1998; Vaz et al., 2015; Ferreira & Souza, 2021). Studies on methods of measuring intellectual capital (Bagatini & Feil, 2020) and innovation generated by the construction of intellectual capital in companies (Jordão & Almeida, 2019; Meyr et al., 2019; Fávero et al., 2020; Lugoboni et al., 2021) also predominate, addressing the application of intellectual capital as a factor of organizational differentiation in incubators and digital financial institutions (Ramírez et al., 2019). Furthermore, Cavalcanti (2022) analyzed such literature and concluded that studies on the development of new economic ecosystems, the impact of intangibles and critical studies in the scope of intangible assets are incipient.

There are knowledge gaps regarding the generation of intellectual capital, that is, how intangible assets, such as human, structural and relational capital, interact, and how specific strategies and new business models – in this study, customer centricity and fintech – can result in intellectual capital and economic value generation. In fact, CI research has not investigated specific relationships, such as customer relationships. Therefore, Nubank was selected as the subject of study, given its size, recent IPO, customer-centric approach, development of pioneering, technological, and low-friction financial products, promotion of financial inclusion in the country, and its recent expansion into other Latin American countries.

Based on this problematization, the question arose: How has Nubank built intellectual capital through a customer-centric business model? Thus, the objective was to analyze how Nubank builds intellectual capital through a disruptive and customer-centric business narrative. To this end, the concepts of intellectual capital from Bontis (1998) and customer-centricity (Vasques, 2007; Damázio et al., 2020) were mobilized, and the narratives (Llewellyn, 1999; Dornelles & Sauerbronn, 2019) underlying the company's performance were analyzed, especially with regard to customer service in relation to its intellectual capital.

This study demonstrates how customer centricity, considered a cultural management control, underpins the development of intellectual capital (human, structural, and relational) in a disruptive organization like Nubank, as it develops new economic ecosystems. By analyzing this company's narrative, the study reveals that customer focus guides decision-making, sustains organizational culture, and shapes operations, product and technology development, and management. Understanding this dynamic allows other companies, especially in the financial sector and other sectors, to recognize the strategic value of prioritizing the customer in building their intangible assets and gaining competitive advantage.

As a theoretical contribution, the study explains how human, structural, and relational capital interact in the formation of intellectual capital, emphasizing how the first two form the basis for developing relational capital. As an innovation, the article introduces the role of customer centricity as a constitutive factor of intellectual capital, which underpins a business model and market performance. The study also expands the theoretical understanding of intangible assets in the context of new economic ecosystems such as fintech

The research also contributes by using narrative analysis as a method to investigate elements underlying the organizational context, management control and business directions (Llewellyn, 1999). This approach allows for the analysis of specific aspects of the organizational context, particularly how the company communicates through its mandatory and voluntary disclosures, complementing more positivist approaches and deepening the understanding of practical issues and specific characteristics of organizations.

In organizational terms, the contribution lies in the insights offered on how a core company value, customer centrality, can shape managerial and organizational aspects, from team composition to technology development and management. The analysis illustrates, through the case of Nubank, how prioritizing the customer can lead to changes in market dynamics, the creation of shared value, and potentially positive financial results. Furthermore, it highlights the importance of aligning organizational culture and decision-making with customer focus.

2. LITERATURE REVIEW

2.1. Intellectual Capital

Bontis' (1998) intellectual capital approach was adopted, which characterizes it by three interdependent dimensions: human, structural, and relational capital. Human capital refers to employee learning. Structural capital refers to the organization's internal procedures, regarding the knowledge incorporated into the company's guidelines and tasks that subsequently generate products and services. Relational capital supports the connection channel between the company and its stakeholders. From this perspective, IC is considered an intangible asset constituted by the investment in knowledge and its application in the organizational structure (Bagatini & Feil, 2021). It is formed by employee knowledge (CH), the retention of this knowledge, and the union of CH with the processes and structures that enable the performance of organizational activities (CE), and relationships with and other agents (CR), primarily customers (Bontis, 1998). It is worth noting that, to meet the objectives of this study, emphasis was placed on customer-oriented relational capital. Intellectual capital is part of a larger group called intangible assets, which are one of the main pillars of value generation in the 21st century.

The body of knowledge and organizational practices have gradually evolved over time. In this sense, Cavalcanti (2022) mapped the evolution of the literature on this topic and classified the historical evolution of intellectual capital studies into five stages. In the first stage, research on the importance of intangible assets predominated (early 1990s). In the second stage, most studies sought to establish standards and guidelines for measuring, managing, and reporting information about intangible assets (late 1990s to early 2000s). In the third stage, there was a concentration of studies focused on critically analyzing the applicability of intangible assets in organizational performance (mid-2005 to 2010). Beginning in 2010, in the fourth stage, research on this topic focused on the role of IC in building economic, social, and environmental systems. In the fifth stage, starting in 2018, we see the development of research that broadens the scope of the previous stages, with studies that impact on the way intangible assets function in society.

Considering the theme of this line of research, Paoloni (2022) conducted a systematic review of the literature on intellectual capital measurement and disclosure over the past ten years. This literature focuses on six principal areas: a) IC and the public sector: includes studies on the role of IC in the public sector, such as local governments and agencies, analyzing how IC is perceived, its impact on performance, and its disclosure in annual reports. b) IC in universities and education: encompasses research analyzing the impact of IC on university performance (especially performance measurement systems), the characteristics of IC disclosure in higher education institutions, measurement methods, and the link between academic performance and IC disclosure. c) IC valuation methods: includes studies addressing IC measurement, including methods based on market capitalization (such as the difference between market value and book value), accounting-based measures, and perceptual measures. It also analyzes the relationship between IC and financial or market performance and the role of moderating factors. This is the most researched area. d) Internal and external IC disclosure: This involves studies on conceptual models for IC disclosure, analyzing the impact of adopting IC disclosure on company value creation, the strategic importance of disclosure for and the influence of governance variables on disclosure practices. It is the second most researched area. e) IC and corporate social responsibility (CSR): This brings together studies that investigate the link between CSR investments and IC initiatives, and the effects of CSR on voluntary IC disclosure. f) IC management in organizations: This focuses on studies that explore the interrelationships between IC, knowledge management (KM) processes, and organizational learning. It analyzes the role of IC in promoting successful KM initiatives and the joint impact of IC and KM on organizational performance. It is the third most researched area.

In more specific contexts, the work of Bagatini & Feil (2021) on the analysis of intellectual capital in financial institutions and its applicability in identifying areas requiring improvement was identified. The research by Fávero (2020) concluded that innovative performance is influenced by intellectual capital management and the companies' absorptive capacity. Along the same lines, Ramírez et al. (2019) address the relationship between business success in business incubators from the perspective of intellectual capital.

Intellectual capital has also been studied considering theories such as Agency Theory and the central role of IC in creating corporate value and demonstrating the fundamental role of its measurement (Wang et al., 2021), and Legitimacy Theory and the requirement of to disclose information about intellectual capital and how disclosure legitimizes the organization (Tayles et al., 2007).

Investigating intellectual capital in the context of customer centricity is considered a research opportunity, as studies on intellectual capital have primarily emphasized theorizing and measuring it. In this sense, the study adds to the body of knowledge from research on the fifth stage of literature, in line with Cavalcanti (2022).

2.2. Customer centricity and Intellectual Capital

Customer centricity is defined as the way to assess how well an organization serves and provides customers with what they need, placing them at the center of its operations. Customer focus lies in the ability to meet two market demands: meeting consumer needs and generating a profitable return from this action for the company (Damázio et al., 2020). Adaptable and flexible institutions that respond to their customers' requests build a connection between dialogue with consumers and technology that sustains and differentiates the organization (Vasques, 2007).

Previous studies have shown that factors such as service innovation influence customer loyalty, seen in the core dimensions of the service provided, technology, and intelligent management (Guimarães et al., 2021). Other aspects, such as trusting relationships, assertive service, and the quality and reliability of are the main factors that lead to customer satisfaction and loyalty in the Brazilian financial sector (Cabral & Torres, 2019). Furthermore, the relationship between intellectual capital and customer retention is explored, as the authors highlight how the components of intellectual capital relate to each other and enable mechanisms for customer retention (Bertolla et al., 2015). Cardoso (2012) analyzed the contractual relationship between customers and suppliers, described technological innovation practices related to the formation of intellectual capital in companies, and found that these positively affect the relationship between these two negotiating agents.

Bueno et al.'s (2024) study addresses the impact of digitalization on operational efficiency and customer service in the banking sector. According to the authors, digitalization constitutes a change in thinking that transforms both traditional operations and customer engagement through innovative digital channels. The integration of digital tools is essential to increase operational efficiency, as the automation and digitalization of routine tasks minimize manual errors, accelerate processing, and result in time and cost reductions. Additionally, digital platforms enable data analysis for more informed decisions, optimizing resources and improving services. These efficiency improvements benefit customers through improved service, faster responses, and personalized experiences, fostering loyalty and trust, aspects identified in Nubank's performance. Thus, Bueno et al. (2024) elucidate that customer centricity, driven by technology, results in operational efficiency and high customer satisfaction, crucial components in the formation of intellectual capital.

In this context, by adopting a customer-centric approach, Nubank challenged the prevailing logic in the Brazilian banking sector, a decades-long oligopoly dominated by five major financial institutions: Itaú Unibanco, Bradesco, Santander, Banco do Brasil, and Caixa Econômica Federal (Partyka et al., 2019). Due to limited competition, this sector was marked by excessive fees and poor customer service. However, technological advances have reached the financial sector (Cavalcanti, 2022), and the environment has been definitively changed by the advent of fintech (Brandt, 2019), that is, financial companies that use technology intensively (Alecrim, 2016). Fintech emerged as startups organizations designed to pursue a sustainable and scalable business model by innovatively addressing the needs of an identified problem (Dall'Agnol & Verschoore, 2019) and dynamically and assertively meeting customer needs.

Intellectual capital and its components (Bontis, 1998) enable the structuring of mechanisms to sustain a customer-centric orientation, while such an orientation can also constitute intellectual capital. The components of intellectual capital are often related to the tangible assets that create corporate value and economic growth (Bukh et al., 2006). Therefore, the goal of digital banks, such as Nubank, is to offer convenience and a more satisfying relationship journey (Brandt, 2019), combining technology, innovative financial services and products, and customer service that displaces incumbent banks and stimulates competition in the financial sector.

It is understood that customer-centric performance has implications for the three dimensions of intellectual capital (Bontis, 1998): a) when processing customer requests and prioritizing customer centricity as the basis of action, the organization seeks to understand consumer needs through agile and clear contact channels, the use of personalized service, and timely resolution, which refers to relational capital; b) the establishment of routines and means to fulfill the aforementioned requests, through activity guidance, pre-established procedures, and delimited functions, which requires structural capital; and c) sequentially, this process allows for the expansion of experience and development of the employee's applied knowledge, since they are required to present new resolutions with the objective of meeting customer requests, which allows for the structuring of human capital.

In other words, customer-centricity, and the individual components of intellectual capital (human, structural, and relational) are complementary elements. Based on the company's core value of customer service, human, structural, and relational capital are built and developed in a reciprocal manner. Consequently, the company disrupts the financial sector, through market differentiation based on accessible and intuitive services and/or products that change the paradigm of poor customer service in the sector.

3. METHODOLOGICAL PROCEDURES

To answer the research question, a qualitative, interpretive study was developed (Gephart, 2004), using Narrative Analysis (Llewellyn, 1999; Dornelles & Sauerbronn, 2019). Thus, we sought to analyze how Nubank builds intellectual

capital through a disruptive and customer-centric business narrative. The investigated company is a fintech founded in 2014, which made the transition from the startup to the growth stage, according to the analysis of its cash flows (Dickinson, 2011).

Data collection was conducted through public documentary sources, including the IPO (Initial Public Offering) prospectus a complete set of financial statements, reference forms, and annual reports, management reports, sustainability reports, and similar reports. Online sources such as the company's website and blog, information from the Central Bank of Brazil (BACEN), and related documents such as governance and ESG policies, transcripts of earnings conference calls, material facts and market announcements, and guidelines from the audit and risk committees, stakeholders' diversity, leadership, and compensation committees were also used. The sources cover more than one hundred documents covering the period from 2013 to 2024. Of these, 56 documents were selected for analysis, totaling 2,954 pages.

The analysis of the documentary sources occurred through the open, axial, and selective coding of Strauss and Corbin (2008), concomitantly with Narrative Analysis (Llewellyn, 1999; Riessman, 2005; Dornelles & Sauerbronn, 2019). This provided an in-depth investigation of the case (Riessman, 2005) through an emphasis on aspects such as temporality, plurality, reflexivity, and subjectivity, often not highlighted in the positivist approach (Rhodes & Brown, 2005). The qualitative data analysis software Atlas.ti 7.0 was used, which favored data organization and in-depth analysis.

For open categorization, five codes (text categories) were initially created based on the previous categories analysis (Table 1). During open categorization, through the inductive process (Saunders, Lewis & Tornhill, 2019), another 132 codes emerged, totaling 137 codes at this stage. In axial categorization, new readings were performed and the codes that emerged from the categorization were grouped according to the open categorization, resulting in 56 codes that characterize the previous categories of analysis and one category that describes the company's operational and accounting characteristics. The codes were reorganized for greater theoretical refinement, that is, they sought to group the codes and classify them into relevant categories. This stage produced a 191-page report with 632 selected excerpts. Finally, selective coding was performed. At this stage, the data from the open and axial categorizations were interpreted based on the thirty-five codes most representative of the phenomenon under study, and the company's narrative was analyzed. These procedures resulted in a theoretical proposition, which emerged from the analysis of the company's narrative.

Previous categories of analysis were developed (Table 1) to operationalize data collection and analysis, based on theoretical foundations on intellectual capital and customer centricity.

Table 1 - Previous categories of analysis

Categories of analysis	Investigated Aspects	
	Constitutive Definitions	Operational Definitions
Human Capital	Human capital is the knowledge intrinsic to an employee, resulting from genetic inheritance, education, experience, and life and work situations. Therefore, it is defined as the pure intelligence of an organizational member, derived from their experiences and learning, becoming perceptible in the actions of the individual's work and life (Bontis, 1998).	Identification of points that characterize intellectual capital, from the perspective of Bontis (1998), as well as its respective constitution in human capital, structural capital, and relational capital.
Structural Capital	Structural capital is the knowledge of employees incorporated into organizations, reflected in the mechanisms and methods of conducting activities that enable the company to function. Therefore, the corporation depends on routines and efficient means of conducting its tasks in a way that drives the maintenance and development of knowledge. Therefore, structural capital is the point that enables the transformation of information into knowledge within the organization and the transmission of this process among employees (Bontis, 1998).	
Relational Capital	Relational capital is the knowledge linked to relationships external to the organization, found in marketing channels and customers. Therefore, this concept resides in the transformation of external requests (consumer needs) into knowledge and, subsequently, internal improvements (products) that demarcate the difference between mediocrity and organizational excellence followed by profitability (Bontis, 1998; Damázio et al., 2020).	

Customer centricity	Customer centricity is the organizational ability to understand consumer needs, how to meet them, and the optimal organization to meet their requests while also obtaining a profitable return from this action. It is analyzed through intuitive and agile contact channels and personalized and transparent customer service. That is, the meaning of customer centricity lies in the ability to generate value for the customer and, at the same time, for the company (Boulding et al. 2005; Tece, 2010).	Characterization of the behaviors and mechanisms adopted that illustrate the company's performance based on customer centricity.
Building intellectual capital through customer centricity	Intellectual capital is constituted by the human, structural, and relational capital present in organizations and inherent to the development of their organizational culture. Therefore, this concept, in its three dimensions, denotes a cyclical movement of mutual influence among its parts, since they are interdependent and the formation of one affects the structuring of the other (Bontis, 1998). At the same time, customer centricity (Tece, 2010) as a primary objective means understanding and optimally meeting customer requests and, from this, enabling a way to build intellectual capital. Receiving new market needs generates intuitive and agile contact channels (relational capital), requires new organizational routines for processing new orders and products (structural capital), and expands the experience and knowledge of employees (human capital).	Articulation of the narrative in which human, structural, and relational capital are applied to develop a customer-centric business model and build intellectual capital. The analytical procedures recommended by Llewellyn (1999), Riessman (2005), and Dornelles and Sauerbronn (2019) were employed.

Source: research procedures

It is important to emphasize that these analytical procedures were conducted in a circular fashion (Stenbacka, 2001), which required multiple readings, reclassifications, and simultaneous implementation of stages. The following validity and reliability criteria were observed: care taken in coordinating data collection and analysis (Stenbacka, 2001); theoretical plausibility in relation to the typology adopted in the study (Eisenhardt, 1989); and the reflexivity of the researchers (Haynes, 2008); both researchers are Nubank customers, and one of them is a long-time customer, having followed the evolution of the company's products, service channels, and services.

4. ANALYSIS OF RESULTS

This section presents the characterization of the company analyzed, the analysis of the narrative underlying Nubank's performance, and the theoretical proposition that emerged from the research results.

4.1. Nubank Characterization

Nubank, founded in May 2013, saw opportunities in the banking services market, as this sector is highly concentrated, rife with abusive fees, known for poor customer service, and underpenetrated. At the same time, the company recognized the potential of Latin America, with over 650 million inhabitants and the potential to become one of the world's major economic hubs (IPO Prospectus, 2021):

The banks in Brazil, Mexico, and Colombia, which on average hold between 70% and 90% of all loans and deposits, charge very high fees and generate disproportionate levels of profitability, based on data from their respective Central Banks. For example, in Brazil, Mexico, and Colombia, there is: (1) a large unbanked population of 134 million adults in total; (2) limited credit card adoption of 27%, 9.5%, and 13.9%, respectively, compared to 65.6% in the United States and 65.4% in the United Kingdom (IPO Prospectus, 2021, pp. 205–206).

The dominance of traditional banks has resulted in problems such as industry concentration, high service costs, poor customer service coupled with a lack of trust, and undemocratic markets. The company identified these market failures as an opportunity to act and offer individual customers and small and medium-sized businesses products and services that foster innovation, development, and improvement of new financial solutions (IPO Prospectus, 2021).

The bank went public on December 8, 2021, and surpassed the 100 million customer mark in the second half of 2024, serving more than 47% of the Brazilian adult population (Q4 Earnings Presentation, 2024). The company bases its actions and justifies its results on its mission and values, the first of which is: "Fighting complexity to empower people," built on the company's core values: (i) we want more and challenge the status quo; (ii) we want our customers to love us like fans; (iii) we think and act like owners, not tenants; (iv) we build strong and diverse teams; and (v) we pursue in-

telligent efficiency (NuImpacto Journey Report, 2021, p. 6, emphasis added). Thus, the relevance of values and cultural controls (Malmi & Brown, 2008) in articulating the bank's business strategy is evident.

Thus, to meet consumer demands through an intuitive and efficient experience (a clear objective expressed in the mission), the emphasizes the customer as the center of demand and delivery of the company's products and services (NuImpacto Journey Report, 2021; IPO Prospectus, 2021; Reference Form [FR], 2021). By generating shared value with the customer and obtaining a profitable return on this action (Tece, 2010), Nubank competes for a position among the major market prioritizing its customers from the definition of its values and culture to the formulation of financial products.

It is noteworthy that values can be understood as a type of managerial (cultural) control that underpins the functioning of companies, influences people's behavior, and the way performance monitoring and evaluation occur (Borsatto & Dal Vesco, 2020). Therefore, customer-centricity is crucial in structuring intellectual capital and for the organization itself. Therefore, the formation of human, structural, and relational capital is preceded by an organizational value based on winning the love and delight of customers.

4.2. Analysis of Nubank's narrative

The romantic narrative plot has fertile ground in accounting and management research, both for the stories implicit in accounting numbers and for their immediate appeal, the progression of events toward a goal, and, therefore, the presence of space for heroism in the figure of certain social agents who make a decisive intervention and achieve a happy ending (Llewellyn, 1999). Thus, the progression of events in the Nubank story indicates the construction of a story classified as an "opportunity" and a "big dream" (Chang, 2009, p. 13) and presents the main narrative elements: i) space, ii) characters, iii) initial situation, iv) conflict, v) climax, and vi) coda (Llewellyn, 1999; Riessman, 2005).

i) Space, the environment that situates the Nubank narrative, is defined as the financial sector in Latin America and the various market and customer service gaps within it. The ii) characters, the agents of the organization's plot, can be defined as protagonists and supporting characters. The protagonists are the customers, the fintech's focus. The supporting characters, who complement the story, are the employees, traditional banks, and financial market regulators. The connection between plot, coherence, and characters is vital for characterizing the narrative and, subsequently, for analysis (Llewellyn, 1999). In the case of the bank, the supporting characters serve the protagonists, the customers, guided primarily by the value "we want our customers to love us like fans," which influences the company's behavior and management, in line with the study by Borsatto and Dal Vesco (2020).

Regarding the plot, the iii) initial situation involved a highly concentrated financial market, abusive fees, and poor customer service (IPO Prospectus, 2021; FR, 2021; NuImpacto Journey Report, 2021). iv) conflict, or the antagonism between characters and the results of this action, refers to the challenge of breaking traditional banks out of inertia and imposing new standards for customer service in the financial sector. Therefore, iv) climax, the narrative's apex, is Nubank's positioning in the market. Currently a publicly traded company, among the major players, has become profitable with a digital and scalable business (Q4 Earnings Presentation, 2024). There is no conclusion to this story yet, but rather a vi) coda, that is, an analysis of the narrative up to the point possible and its resumption to understand its trajectory and effects (Riessman, 2005).

This narrative, summarized in Table 2, represents how the company structures to prioritize customers.

Table 2 - Narrative underlying Nubank's business model

In a kingdom dominated by financial giants, where high fees and bureaucracy reigned, a small spark of hope emerged: Nubank. Inspired by the core belief "we want our customers to love us like fans," Nubank built a business model entirely focused on winning the hearts and minds of those who felt ignored and mistreated by traditional banks.

Act 1: The Flame of Revolution

On the Latin American stage, where millions of people yearned for a fairer and more transparent financial system, Nubank emerged like a knight errant, wielding the sword of technology and the shield of simplicity. The mission was clear: to combat complexity and empower people by offering products and services that truly met their needs.

The protagonists of this saga were the customers, tired of being treated as mere numbers. They desired a closer, more human, and more transparent relationship with their banks, and Nubank set out to be the ideal partner.

Act 2: Winning Hearts with Innovation

The first step to winning customers' love was challenging the status quo, breaking with the abusive practices that dominated the market. Nubank launched its credit card with no annual fee, a true revolution for its time. The app's simplicity and transparency, combined with personalized and efficient customer service, quickly won customers' admiration.

The company didn't stop there. With each new product and service, Nubank strived to exceed expectations, offering innovative and intuitive solutions for every stage of the financial journey, from "spending" to "protecting." NuConta, NuInvest, NuSócios, and NuVida life insurance were all created with the goal of simplifying customers' lives and helping them thrive.

Act 3: Cultivating a Lasting Love

Customers' initial passion for Nubank has transformed into a solid and lasting relationship. The company has cultivated this love through transparent and constant communication, listening carefully to user feedback and constantly striving to improve its products and services.

Nubank understands that customer loyalty isn't limited to offering good products, but also to building an engaged and participatory community. Through the "Fala, Nubank" blog, the "NuCommunity" platform, the "NuEnsina" educational program, and other initiatives, the company connects with its customers, shares knowledge, and invites them to be part of the purple revolution.

Epilogue: A Happy Ending in the Making

Nubank's story is still being written, but the core value of "we want our customers to love us like fans" continues to guide the company's every step. Nubank strives to build a legacy of financial inclusion and empowerment, transforming the banking industry and creating a future where everyone can access fair, transparent, and humanized financial services.

Nubank's success demonstrates that, in an increasingly digital and impersonal world, customer love is the most valuable asset a company can have. By placing the customer at the center of its strategies, Nubank has gained not only market share but also the loyalty and admiration of millions of people.

Source: results of the research

Nubank's narrative (Table 2) illustrates how the company's history is based on building intellectual capital under the premise of customer centricity. Relational capital, which involves interaction with customers and partners, is essential for driving innovative practices and strengthening competitiveness, which leads to better results, as highlighted below. These results expand on the findings of Cassol (2015) and Lugoboni (2022). Cassol (2015) explore the dimensions of intellectual capital in aggregate, without considering the specificities of each dimension, and concludes that companies that manage their intellectual capital well are more likely to innovate and stand out in the market. Lugoboni (2022) show that the focus of intellectual capital management falls primarily on customer relationships, emphasizing the importance of this specific dimension for intellectual capital management. However, the authors do not delve into how such management occurs.

This narrative highlights the constitutive relationship between customer centricity and intellectual capital. In this vein, Bagatini and Feil (2021), when measuring the IC of a financial institution focused on the high-income and corporate segments, corroborate the concept of customer centricity as a relevant value in the financial sector. Furthermore, technology is essential for focusing on customer experience and differentiation, especially for like Nubank (Bueno, 2024), and can result in customer loyalty (Guimarães, 2021).

In this context, it is important to emphasize that technology is a key structural capital for Nubank, as highlighted by Dall'Agnol and Verschoore (2019). Digital technologies are identified as a fundamental strategic characteristic for sustaining customer-focused operations. Thus, based on the analyzed narrative, agility and experimentation can be related to aspects of human capital (ability to adapt and learn) and structural capital (flexible processes) driven by Nubank's culture.

The premise of customer centricity represents the company's values, cultural controls that provide the context for shaping its business strategy, product offerings, and customer service. In this sense, these cultural controls reflect the vision of the founders and senior management, which is disseminated throughout the company and incorporated by its employees. This also guides how other management controls are established and used (Malmi & Brown, 2008; Borsatto & Dal Vesco, 2020). Thus, the analyzed narrative highlights how intellectual capital management is linked to value creation based on users' needs and expectations. Innovation, leveraged by the digitalization of banking activities, in turn, becomes a means of consolidating this customer centricity. In this sense, the integration of intellectual capital and customer focus is essential for the company's sustainability and competitiveness.

Based on this narrative and the results presented, Nubank presents a long-term orientation strategy, balancing economic return with value creation for customers, reflected in its results. For example: Average Monthly Revenue per Active Customer (ARPAC) of US\$10.70 (Q4 2024 Earnings Release), a 23% increase compared to 2023, highlighting the maturation of "customer generations." Each generation reflects an increase in revenue generation as users spend more time with the bank. Customer service and satisfaction lead to an engaged customer profile, a broader portfolio of products and services, and, at the same time, a broader financial life through the Nubank platform, which offers low-cost, low-friction services (IPO Prospectus, 2022).

The company also boasts a low Cost to Serve of US\$0.80 (Q4 2024 Earnings Release), historically maintained below US\$1.00 (Earnings Release, 2021; 2022; 2023; 2024). According to Padoveze (2012), these results indicate operational efficiency. The gradual growth in revenue per customer and the maintenance of the cost to serve level in recent fiscal years reflect a scenario in which the company has leveraged its operational leverage to increase its operating profitability, as its costs are stable and revenues have been growing steadily. It is worth noting that ARPAC and Cost to Serve per customer are cybernetic controls (Malmi & Brown, 2008) adopted as priorities based on the company's values (Borsatto & Dal Vesco, 2020).

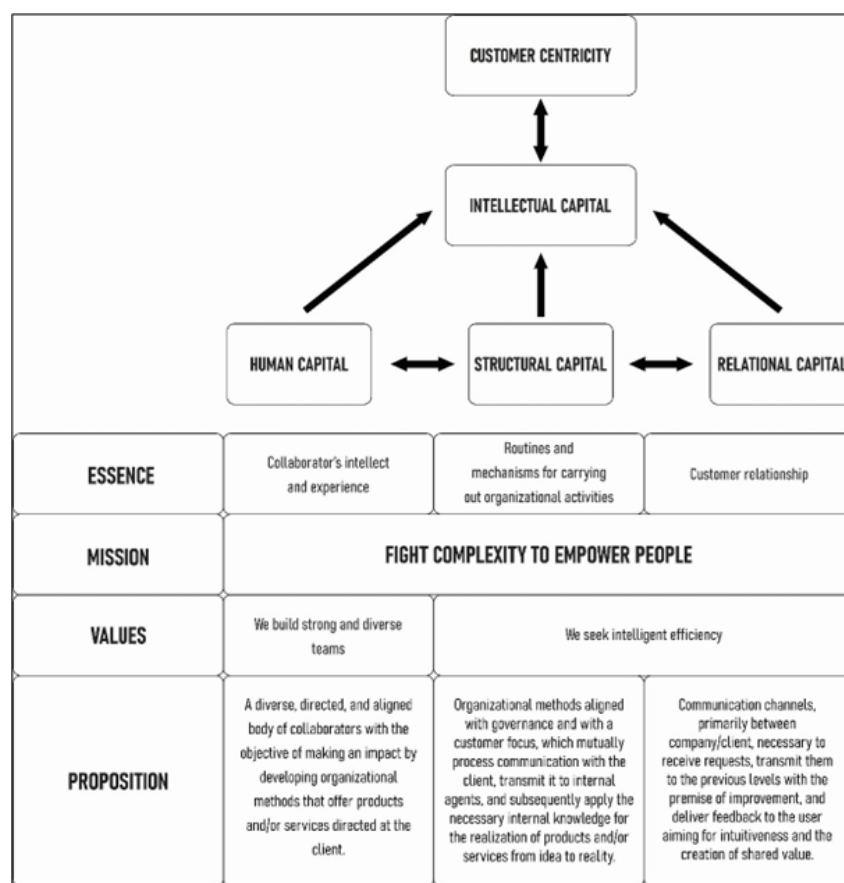
Results such as these are possible given the company's limited internal structure to serve its customers, such as the lack of physical branches and a small number of employees, compared to other incumbent banks with similar customer

numbers. This combination of results is typical of technology-intensive companies (Bueno et al., 2024). However, the narrative underlying Nubank's business strategy favors the bank's operational leverage, as the company engages its customers and develops them as revenue sources that grow over time. Through a technological and scalable customer-focused strategy, Nubank seeks customer delight, a result of which is corroborated by leading NPS (Net Promoter Score) levels in the geographies where it operates (Blog "Fala, Nubank," 2024), reflecting its emphasis on customer experience (Bueno et al., 2024). Therefore, by combining economic returns with the creation of symbolic value for the consumer, based on strategies that prioritize earnings stability over economic growth, the fintech counters the notion of growth in the financial market at the expense of users and establishes a new benchmark in the sector: customer protagonism.

4.3. Theoretical model and theoretical proposition

Figure 1, developed during selective categorization, based on the analyzed narrative, consists of a theoretical model that synthesizes the research and emphasizes the main results.

Figure 1 – Alignment between values and intellectual capital based on customer centrality and theoretical proposition



Source: research results.

The theoretical model (Figure 1) also reflects the theoretical proposition that emerged from the analysis of the narratives, as articulated below.

Theoretical proposition: Intellectual Capital constituted through customer centrality:

Nubank's intellectual capital development at the human, structural, and relational levels is customer centric. Relational capital involves customer relationships and manifests itself within the organization in actions such as accessible and intuitive products enabled by app-based service and low service costs, or personalized customer service supported by a comprehensive database. User profile analysis and support for financial development are also evident through the dissemination of educational content on the financial market and personal finance. In this way, the company structures its communication channel with external stakeholders and as mentioned above, requires the support of both structural and human capital. Therefore, in this relational framework, Nubank achieves values such as "we seek intelligent efficiency" and "we want our customers to love us like fans" (NuImpacto Journey Report, 2021, p. 6) by positioning the

customer as its primary objective, creating an emotional connection with them, and establishing easy and agile means of communication with consumers. Structural capital is built in three ways: customer-centricity, the needs required by relational capital, and the demands it directs to human capital—that is, through the connection between these elements. In this context, structural capital empowers the organization through platform development, targeted and applicable to the company's objective, or even the primary objective of meeting consumers' needs throughout their financial journey with intuitive products and/or services. Importantly, the structuring of corporate governance that conveys organizational values and aligns the internal vision from the top to the base of the hierarchical pyramid, emphasizing the goal of positively impacting people's lives. In this sense, the company's routines seek to facilitate the values “we want more and challenge the status quo” (NuImpacto Journey Report, 2021, p. 6) from the inside to the outside, as routines and values are transmitted to the direction of products and services. Similarly, the value of “we seek intelligent efficiency” (NuImpacto Journey Report, 2021, p. 6) is made possible because the Relational Capital connection requires products that enable this value to be delivered to the customer.

The other elements of intellectual capital depend on human capital, which comprises individuals with diverse perspectives and realities, as well as disparate knowledge and experiences, who assist in organizing internal knowledge and applying and communicating it to the corporate body. Thus, human capital delivers the knowledge to be applied within the fintech structure and directs individuals working in customer service, prioritizing the continuous learning cycle across departments, and retaining employees through recognition and compensation initiatives. The digital bank delivers the value of “we think and act like owners, not like tenants” (NuImpacto Journey Report, 2021, p. 6) through actions that encourage employees to propose ideas and gradually test new ways of acting, valuing the customer and resulting in a shift in service paradigms in the financial sector.

In this sense, Nubank builds on the three perspectives of intellectual capital based on customer centrality, whether in communication with users, internal organization to meet external needs, or even in the selection and retention of prepared and focused employees. Therefore, customer centrality is the beginning and end of the relationship, as it constitutes intellectual capital and, through its formation and application, feeds back into the perpetuation of customer focus. Based on this relationship, Nubank stipulates and directs its actions towards the mission: “combating complexity to empower people” (NuImpacto Journey Report, 2021, p. 6), understanding that simplifying access to financial services allows for banking inclusion in the country, improves the community's quality of life, and empowers them with control over the external levels of their experience, such as managing personal finances.

In short, the theoretical proposition presented demonstrates that the constitution of Nubank's intellectual capital in the three dimensions described by Bontis (1998) is intrinsically linked to customer-centricity (Damázio et al., 2020). This centrality acts as a driver for the development of intuitive and accessible products (relational capital), for the internal structuring of the organization and its processes, including the use of technologies to mediate product use and customer relationships (structural capital), and for the training and engagement of its employees (human capital). In this sense, prioritizing the customer not only shapes the company's external interactions but also underpins its internal dynamics, creating a virtuous cycle that feeds back into customer focus and supports Nubank's mission of combating complexity and empowering people to access financial services.

5. FINAL CONSIDERATIONS

The objective of this study was to analyze how Nubank builds Intellectual Capital through a disruptive, customer-centric business narrative. Thus, we analyzed how the chain of actions supported by cultural control and customer-centric values constitutes intellectual capital.

The combination of customer centrality and the individual components of intellectual capital (human, structural, and relational capital) is interdependent and mutually influential, as intellectual capital, in its three dimensions (Bontis, 1998), is developed through customer service, the company's core value. From this perspective, the company disrupts the financial sector, promoting market differentiation based on accessible and intuitive services and/or products that shift the paradigm of poor customer service.

The study contributes theoretically by explaining how human, structural, and relational capital interact in the formation of intellectual capital, particularly how the first two form a foundation for developing the relational sphere. This complement Bontis' (1998) perspective and adds to the emerging literature on how intangible assets manifest themselves in the organizational context and in the development of new economic ecosystems, such as fintech (Cavalcanti, 2022). When addressing the formation of intellectual capital, the role of a customer-centric stance in the development of a business model and subsequent market performance is highlighted. It is understood that the customer-focused strategies developed by Nubank are antecedents to the formation of intellectual capital and, consequently, to the generation of economic value. This conclusion is supported by the feedback loop. Feedback begins with the orientation of human capital toward customers, followed by the development of products and services that meet demand. These activities are conducted through internal mechanisms (structural capital) and culminate in delivery to external agents through relational capital, sustained by customer satisfaction.

Furthermore, the research broadens the field of which until now had focused primarily on categorization, literature review, and comparison with incumbent banks. Finally, it is worth highlighting that the company developed its own

accounting indicators and uses them to inform current and potential such as the “average cost to serve per customer.” This demonstrates the company’s efforts to demonstrate that the value generated for customers can be converted into economic value.

Methodologically, this research contributes to the adoption of narrative analysis. This theoretical-analytical strategy allowed for the analysis of elements underlying the company’s operations since its founding. Moreover, the mandatory and voluntary financial statements provide visibility to a range of information, facts, and stories. It is understood that adopting this research method can result in investigations that delve deeper into practical issues and organizational specificities. Limitations include the limited use of company-published documents as research sources. We sought to triangulate multiple sources, mandatory disclosures, official documents, and information from other channels to mitigate this limitation.

Future studies should investigate how cultural values and controls relate to, or even their role in, the formation of different forms of intellectual capital, given that companies’ values and strategic objectives are reflected in third parties and in management control. Therefore, it is also recommended to conduct research that investigates intellectual capital in its context of occurrence and not just as an independent variable. (Miller & Power, 2013). Other research possibilities include identifying antecedents or other organizational aspects that have some relationship to the development of intellectual capital and analyzing the accounting mechanisms adopted by companies in the so-called “new economy” in communicating cultural controls, given that companies are established and operate from an accounting perspective.

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MANAGEMENT CONTROL SYSTEMS AND INNOVATION MANAGEMENT: AN INVESTIGATION IN COOPERATIVE ORGANIZATIONS

SISTEMAS DE CONTROLE GERENCIAL E GESTÃO DA INOVAÇÃO: UMA INVESTIGAÇÃO EM ORGANIZAÇÕES COOPERATIVAS

ABSTRACT

The objective of this research was to identify whether each of the control systems from Simons' framework (beliefs, boundaries, diagnostic, and interactive) is distinctly related to different types of innovation—incremental and radical—within the context of cooperatives. A total of 94 cooperatives from Goiás (a Brazilian estate) participated in the study, and data analysis was conducted through correlation tests and simple linear regression. The results indicate that, in the sample studied, both boundary and enabling systems foster two forms of innovation: incremental and radical. Evidence was also found that the relationship and emphasis of these phenomena are influenced by the cooperatives' business sectors and geographic clusters. These findings enrich the debate on the actual relationship between the constructs and suggest that such a relationship may vary according to the organizational structure.

Keywords: management control systems, levers of control, innovation, cooperatives.

RESUMO

O objetivo desta pesquisa foi identificar se cada um dos sistemas de controle do framework de Simons (crenças, limites, diagnóstico e interativo) se relaciona de maneira distinta com os diferentes tipos de inovação, incremental e radical, no contexto das cooperativas. Participaram da pesquisa 94 cooperativas goianas e a análise de dados foi realizada por intermédio dos testes de correlação e regressão linear simples. Os resultados apontam que, na amostra estudada, tanto os sistemas delimitadores como os facilitadores promovem duas formas de inovação: incremental e radical. Foram encontradas evidências de que a relação e ênfase desses fenômenos são também influenciadas pelos ramos de atividade e pelo cluster geográfico das cooperativas. Essas evidências enriquecem o debate sobre a real relação entre os constructos e indicam que essa relação pode variar de acordo com a estrutura da organização.

Palavras-Chave: sistemas de controle gerencial, alavancas de controle, inovação, cooperativas.

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1. INTRODUCTION

Management control systems (MCS) are formal routines employed by managers to maintain or alter the patterns of organizational activities (Simons, 1995). In recent decades, a stream of research (Bisbe & Otley, 2004; Bedford, 2015; Bisbe & Malagueño, 2015; Baird, Su, & Munir, 2019) has highlighted that certain models of MCS are relevant for the management and promotion of innovation.

The framework proposed by Simons (1995) presents four management control systems—beliefs, boundaries, diagnostic control, and interactive control—which, although designed to guide and monitor organizational activities, also provide flexibility and support for the development of innovation.

Innovation is the core of organizational creation and survival (Carvalho, Reis, & Cavalcante, 2011; Bisbe & Malagueño, 2015). Innovation initiatives enhance organizations' competitive potential and economic development (Schumpeter, 1997; Carvalho, Reis, & Cavalcante, 2011; Popadiuk, 2015). In this study, the concepts of radical and incremental innovation proposed by Schumpeter (1997) are adopted, referring respectively to the creation of new products, processes, and services, and to the continuous improvement of existing ones. Both forms of innovation play an important strategic role, yet they serve different functions (Lawson & Samson, 2001) and, therefore, demand distinct control mechanisms for their management (Davila, Foster, & Oyon, 2009).

According to March (1991) and Bedford (2015), the certainty, speed, accuracy, and clarity of a diagnostic control system, along with the clear definition of risks and opportunities to be avoided as established by boundary systems, are more effective for incremental innovation. In contrast, belief systems (Widener, 2007; Mundy, 2010) and interactive control systems—focused respectively on disseminating organizational values and beliefs, and on fostering communication between managers and employees (Bisbe & Otley, 2004; Tessier & Otley, 2012; Arjalès & Mundy, 2013)—create environments conducive to the implementation of radical innovation.

Implementing control systems capable of responding to environmental pressures and the needs of cooperative members (Pletsch & Lavarda, 2016) is essential for cooperatives to survive in a competitive environment that requires constant encouragement of innovation—the creation and continuous improvement of their “products, processes, or services” (Jerônimo, Maraschin, & Silva, 2006; Padilha, Severo, Delgado, & Silva, 2010).

The relationship between belief, boundary, diagnostic, and interactive systems and the types of innovation (incremental and radical) differs in cooperatives due to their democratic structure and collaborative values. Cooperatives such as Land O'Lakes (USA) often adopt incremental innovations, such as improvements in agricultural techniques, aligned with collective consensus (Chaddad & Cook, 2004). Radical innovation, on the other hand, which requires disruptive changes, is more challenging due to risk aversion and democratic decision-making.

Boundary systems in cooperatives, grounded in principles such as those of the International Cooperative Alliance (ICA), may restrict radical innovations, whereas collaborative diagnostic systems facilitate gradual improvements. For example, credit cooperatives such as Desjardins (Canada) employ participatory processes to incrementally enhance financial services (Malo & Vézina, 2004). The organizational culture of cooperatives, which values inclusion and equality, also shapes this dynamic. Legacoop (Italy) promotes incremental innovations but faces challenges in adopting disruptive technologies, such as artificial intelligence, due to the need for consensus (Borzaga & Galera, 2021).

Given the context of cooperative organizations and the framework proposed by Simons (1994), according to which control systems play a decisive role in guiding the organization—whether toward continuous improvement or the creation of new products, processes, and services—the following research question emerges: Is each control system in Simons' framework related to a specific type of innovation, incremental or radical, in cooperatives? Accordingly, the objective of this research is to identify whether each of the control systems in Simons' framework (beliefs, boundaries, diagnostic, and interactive) is distinctly related to different types of innovation, incremental and radical, within the context of cooperatives. In Brazil, cooperativism is present in the agricultural, credit, transportation, labor, goods and services production, health, consumer, and infrastructure sectors (Organização das Cooperativas do Brasil [OCB], 2024). According to OCB data (2024), in 2023 cooperative activity generated revenues of R\$ 692 billion, benefiting 23.45 million members and 550.61 thousand employees.

Sell, Pletsch, Lavarda, and Silva (2023) and Pletsch and Lavarda (2016) emphasize the demand for investigations that assess the applicability of the levers of control model in cooperatives, particularly in the Brazilian context. Studies have identified positive correlations between management control systems and an innovation culture (Bicigo & Cescon, 2022). However, despite the growing interest in the theme of innovation within the context of the Levers of Control over the past decade, the literature remains incipient, and some studies present divergent results. This scenario highlights the need for further investigations, opening new research opportunities on the subject (Agnol, Diehl, & Leite, 2020).

The contributions of this study encompass two perspectives: theoretical and practical. From the theoretical perspective, this research contributes by providing evidence that: (1) the use of control systems is associated with and positively related to both incremental and radical innovation; (2) systems associated with values, principles, and rules have greater potential to promote both incremental and radical innovation initiatives; and (3) the industry sector can alter the intensity of the relationships and their interrelation, as the behavior as complementary or supplementary changes according to the sector of activity.

As a practical contribution, this research provides society with important information about cooperative organizations. These insights, related to management control and innovation systems, offer: (1) researchers, guidance for future studies; (2) professionals and managers, an overview of these phenomena and evidence of the potential and importance of these mechanisms for organizational development; and (3) the OCB/GO, an overview that enabled the provision of initiatives such as lectures, workshops, and short courses for presidents aimed at improving and advancing these mechanisms within cooperatives.

2. THEORETICAL FRAMEWORK

The distinction between enabling and constraining systems is based on Simons' (1995) proposal, which describes the Levers of Control as mechanisms that both stimulate and restrict innovation. Studies such as Mundy (2010) and Bedford (2015) emphasize that control systems can function in an **enabling** manner, fostering radical innovation, or in a **constraining** manner, focusing on efficiency and incremental innovation. Building on this literature, this research adopts this division to analyze the relationship between different types of control systems and innovation.

Organizational innovation can be influenced by different approaches to management control (Garcia, Carraro, & Dimon, 2024; Anjos et al., 2024). While enabling systems encourage creativity and experimentation, constraining systems ensure stability and risk mitigation (Assis et al., 2023; Kaveski & Beuren, 2020). In the context of cooperatives, characterized by democratic governance and greater risk aversion (Mannes & Beuren, 2024), understanding these differences is essential for assessing their influence on incremental and radical innovation.

In this research, control systems are grouped according to Simons (1995):

- **Enabling systems:** foster openness to new ideas and organizational learning, such as belief systems (Widener, 2007; Mundy, 2010) and interactive systems (Bisbe & Otle, 2004).
- **Restrictive systems:** establish boundaries for decision-making and minimize risks, such as diagnostic control (Bedford, 2015) and boundary systems (McCarthy & Gordon, 2011).

Studies indicate that belief and interactive systems encourage experimentation and rapid adaptation, favoring radical innovation (Arjaliès & Mundy, 2013; Bedford, 2015). On the other hand, diagnostic control and boundary systems are more effective for incremental innovation, as they establish strict guidelines for continuous improvement (Chenhall & Moers, 2015; Guo, Paraskevopoulou, & Sánchez, 2019). Based on this distinction, this research formulates hypotheses to assess these relationships in the context of cooperatives.

2.1 Enabling systems and radical innovation actions

Enabling systems—beliefs and interactive control—are positive-force control mechanisms that create room for experimentation and allow employees to be creative in seeking solutions and developing their activities (Simons, 1995).

The belief system aims to encourage employees to embrace the organization's core values in the pursuit of new opportunities (Widener, 2007; Mundy, 2010; Bandiyono & Augustine, 2019). The interactive control system functions as a mechanism for managers to share and communicate with employees about business uncertainties (Stewens, Widener, Moller, & Steinmann, 2019), fostering organizational learning and the emergence of new ideas and strategies (Simons, 1994).

Experimentation, creativity, and the implementation of new ideas are stages of the innovation process (Bisbe & Malagueño, 2015), which are expected to result in a new product, service, production method, organizational structure, or exploration of new markets (Schumpeter, 1997). Combined with uncertainty and the need for rapid adaptation, these are defining characteristics of radical innovation actions (March, 1991; Schumpeter, 1997). Garcia, Carraro, and Dimon (2024) emphasize that the strategic use of interactive control systems can facilitate communication and continuous learning, thereby strengthening radical innovation.

Bisbe and Malagueño (2015) found evidence that in non-conservative companies—those inclined to take risks and proactive in seeking new market opportunities—value systems (beliefs and boundaries) and interactive control were associated with innovation at the level of creativity. In conservative companies, however, these systems were associated only with the processes of idea filtering, improvement of existing products, and review of resource commitment to innovation efforts.

Cruz, Frezatti, and Bido (2015) found evidence in Brazilian companies that both the focus on disseminating organizational core values, established through the belief system, and the dynamics of communication and idea exchange, enabled by the interactive control system, contribute to achieving technological innovation.

Beyond product and service innovations, Baird, Su, and Munir (2019) identified that the extensive use of belief and interactive control levers was positively associated with managerial innovation (new managerial practices, processes, structures, and organizational techniques). The authors further concluded that the levers of control precede innovation processes.

A system that provides managers with information on aspects related to organizational values or preferences constitutes a belief system (Mundy, 2010). In cooperative organizations, beliefs, principles, and values form the fundamental basis for the development of their activities. Delfino, Lan, and Silva (2010) identified that in these organizations, employees' values tend to be aligned with the organization's principles.

In light of the theoretical assertions by Simons (1995) and Widener (2007) that the levers of control are capable of fostering innovation, as well as the empirical evidence (McCarthy & Gordon, 2011; Bedford, 2015) that there is a relationship between the use of control systems and forms of innovation, and considering the strong emphasis of cooperative organizations on their principles and values, it is expected that cooperatives, by emphasizing the use of the belief control system, will communicate their values to employees to build long-term commitment and inspire the pursuit of new opportunities. Therefore, organizations are directed toward the execution of radical innovation actions, and the following hypothesis is proposed:

H1a: The use of the belief control system has a positive relationship with Radical Innovation actions.

The interactive control system enables managers to recognize and integrate opportunities and new ideas into organizational routines (Simons, 1995). Bedford (2015) found evidence that companies focused on radical innovation actions performed better when they emphasized the use of interactive control systems. Stewens, Widener, Moller, and Steinmann (2019) identified that innovation capacity, in both stable environments and especially in turbulent environments requiring rapid adaptability, was driven and facilitated by the use of the interactive control system.

Interactive control allows managers' personal and regular involvement in employees' activities to identify initiatives with greater potential for competitive advantage (Simons, 1995). According to Parolin and Albuquerque (2011), in cooperative organizations there is a constant practice of dialogue that offers broad opportunities for participation in group discussions on organizational decisions. In this context, it is believed that cooperatives emphasizing the use of the interactive control system employ performance measures to facilitate dialogue between managers and employees and to stimulate the emergence of new ideas and strategies; therefore, they focus their activities on radical innovation actions. Thus, it is suggested that:

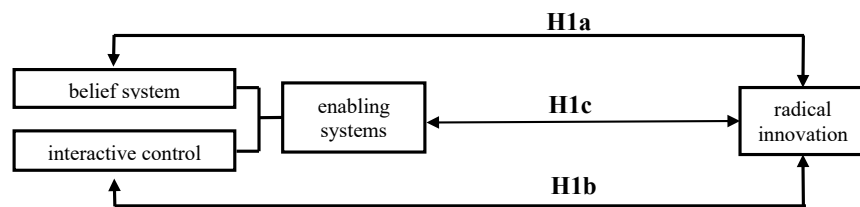
H1b: The use of the interactive control system has a positive relationship with Radical Innovation actions.

To translate opportunities and new ideas into commercially viable outcomes, a coordinated allocation of resources is required (Simons, 1995). In other words, without interactive controls, the new ideas inspired by the belief system may take longer to be effectively realized (Bedford, 2015). According to McCarthy and Gordon (2011), in terms of radical innovation, belief systems and interactive control systems work together to generate relevant and adaptable research and discoveries.

Interactive control systems maintain or adjust radical innovation activities in a specific direction over time (McCarthy & Gordon, 2011), but they are potentially more effective when there is congruence between the organization's values and purposes and those of its members (Widener, 2007). Thus, cooperatives that combine the use of belief systems and interactive control—collectively referred to as enabling controls—are expected to direct and foster Radical Innovation actions, as detailed in the figure below:

H1c: Enabling controls have a positive relationship with Radical Innovation actions.

Figure 1 - Theoretical research model (H1)



2.2 Constraining systems and incremental innovation actions

Constraining systems—boundaries and diagnostic control—are grounded in the establishment of limits for the pursuit of opportunities and in the control and guidance of behavior toward achieving organizational goals (Simons, 1995).

The boundary system defines and reinforces the limits that employees must not cross (McCarthy & Gordon, 2011; Bandiyono & Augustine, 2019). The diagnostic control system provides a monitoring mechanism and motivates employees to align their behavior with organizational goals (Bandiyono & Augustine, 2019).

These systems are concentrated in organizations that pursue low-cost strategies and operate in more stable environments (Chenhall & Moers, 2015). Guo, Paraskevopoulou, and Sánchez (2019) state that constraining systems have a stronger positive association with innovation in low-technology industries, which emphasize efficiency strategies. This latter aspect is consistent with incremental innovation actions, characterized by the continuous improvement of existing

products, processes, and services without significant disruptions, but with a focus on efficiency and gradual enhancement.

The structured management of incremental innovation is fundamental for cooperative organizations, as it ensures strategic alignment without compromising operational efficiency (Mannes & Beuren, 2024). Kaveski and Beuren (2020) emphasize that the structure and predictability provided by diagnostic control systems are essential for ensuring the continuity of incremental innovation. The use of constraining controls to manage incremental innovation is consistent with the need to establish clear strategic guidelines, as highlighted by Assis et al. (2023).

Evidence of the relationship between boundary systems and diagnostic controls with incremental innovation was found by Bedford (2015), who identified that companies characterized by incremental innovation actions performed better when they emphasized the use of boundary and diagnostic control systems.

Cruz, Frezatti, and Bido (2015) found a positive association between innovation and the boundary system, but not with the diagnostic control system. Their findings suggest that the boundary system leads to actions that contribute both to improvements in existing products and processes and to the creation of new ones. However, in the study conducted by Baird, Su, and Munir (2019), the tests indicated that innovation impacted organizational performance only through diagnostic and boundary control systems.

Stewens, Widener, Moller, and Steinmann (2019) found that the diagnostic control system is directly and positively associated with product innovation and indirectly associated with the innovation rate in environments of high uncertainty. For the authors, these results imply that the rigidity of diagnostic use does not directly contribute to the creative aspects of innovation when the environment is turbulent. This shift in the type of relationship, resulting from the organization's context or changes occurring within it, is consistent with the argument that constraining control systems are more suited to stable environments with lower levels of risk.

March (1991) indicated that the certainty, speed, accuracy, and clarity of a feedback system are more synergistic with incremental innovation actions than with radical ones. Pletsch and Lavarda (2016) identified, in a cooperative, the practice of using the diagnostic control system to monitor activities and results in order to guide the achievement of desired objectives. In this context, cooperatives that emphasize the use of the diagnostic control system are expected to intensify their activities in incremental innovation actions. Therefore, it is suggested that:

H2a: The use of the diagnostic control system has a positive relationship with Incremental Innovation actions.

To reduce the risk of tension or pressure, management control systems are used to specify and enforce organizational rules (Simons, 1995). According to the study conducted by Pletsch and Lavarda (2016) in the cooperative analyzed, the boundary system was used only when there was a need to establish operational and behavioral limits and, once defined, these limits became rules.

Bedford (2015) states that the clear definition of risks and opportunities to be avoided directs employees' efforts and makes them more effective in exploiting existing capabilities. Based on the theoretical definitions and the empirical evidence found by Baird, Su, and Munir (2019) and Stewens et al. (2019), it is expected that cooperatives emphasizing the use of the boundary system will employ codes of conduct, policies, and sanctions to determine risks to be avoided and limits for the pursuit of opportunities, thereby intensifying their activities in incremental innovation actions. Therefore, it is expected that:

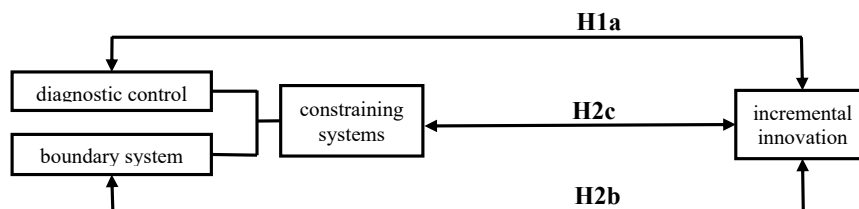
H2b: The use of the boundary control system has a positive relationship with Incremental Innovation actions.

Although the diagnostic control system communicates the desired organizational outcomes, it does not specify how these results should be achieved, that is, the boundaries that must be observed (Bedford, 2015). The absence of clearly defined boundaries increases the space for employees to engage in excessive experimentation, which may result in resource waste and heightened risks of operational discontinuity (Simons, 1995).

According to McCarthy and Gordon (2011), the combined use of these levers allows for the identification of deviations from desired results through diagnostic control and, if such deviations persist, boundary systems are then implemented. Boundary and diagnostic control systems create extrinsic motivation by providing formula-based rewards and delimiting the domain for the pursuit of opportunities (Simons, 1995), characterized by a feedback-oriented control approach that generates or enhances incremental innovation activities (McCarthy & Gordon, 2011). The theoretical framework provides the basis for the understanding that the boundary system strengthens the effectiveness of diagnostic controls. Thus, it is expected that cooperatives combining the use of boundary and diagnostic systems—constraining controls—will intensify their activities in Incremental Innovation actions, as illustrated in the figure below:

H2c: *Constraining controls have a positive relationship with Incremental Innovation actions.*

Figure 2 - Theoretical research model (H2)



3 METHODOLOGY

3.1 Sample selection and data collection procedure

The data for this research were collected through a questionnaire and refer to the use of management control systems and innovation actions in cooperatives. The data collection instrument was developed through the adaptation and combination of the instruments by Widener (2007) and Bedford and Malmi (2015) for management control systems, and by Lubatkin et al. (2006) and Bedford, Bisbe, and Sweeney (2018) for innovation, as presented in Table 4. The questionnaire underwent the following construction phases: (1) analysis and selection of instruments from previous empirical studies and adaptation to the population of this research; (2) content validity testing, presented in item 3.4; and (3) submission to and approval by the ethics committee.

The questionnaire was made available by OCB/GO alongside the data collection for the annual census of cooperatives, from March 3 to August 5, 2020. The instrument was divided into two parts: (1) identification of the respondent and the cooperative, and (2) measurement of the studied phenomena. Part 2 consists of 40 variables (see Table 6) measured using a seven-point Likert scale (1=strongly disagree and 7=strongly agree). The scale employed is based on Arantes and Soares (2020).

The research population consisted of 235 cooperatives in Goiás (a Brazilian state) affiliated with OCB/GO. The sample was census-based by voluntary participation and resulted in 134 responses. After excluding incomplete questionnaires and duplicate responses, the final sample comprised 94 cooperatives, distributed across the following sectors:

Table 1 - Research sample

sector of activities	valid responses	frequency (%)
Crop & livestock production	36	38%
Consumer	2	2%
Credit	23	24%
Health	18	19%
Labor, Goods, and Services Production	4	4%
Transportation	11	12%
total	94	100%

3.2 Treatment and measurement of variables

First-order variables were obtained from the mean of the values reported in the responses to the set of variables belonging to the same construct. Second-order variables were determined by summing the means of the first-order variables (see Table 3).

Table 2 - variable equations

		equation
first-order factor	belief system	mean of V16 to V20
	boundary systems	mean of V11 to V15
	interactive control	mean of V6 to V10
	diagnostic control	mean of V1 to V5
	incremental innovation	mean of V31 to V40
	radical innovation	mean of V21 to V30
second-order factor	enabling systems	$\bar{x}$ BELIEF + $\bar{x}$ INTER
	constraining systems	$\bar{x}$ BOUND + $\bar{x}$ DIAG

To test the hypotheses, two types of statistical tests were conducted: Pearson's correlation and simple linear regression. For the Pearson correlation tests, the steps suggested by Dancey & Reidy (2006) were followed, encompassing the assessment of dispersion, direction of the relationship, and evaluation of magnitude. With respect to the regression tests, the necessary conditions for conducting the analyses were evaluated, including verification of the minimum number of observations, assessment of data normality through skewness and kurtosis, confirmation of the absence of outliers, and verification of multicollinearity, as recommended by Dancey & Reidy (2006).

3.3 Instrument evaluation

The validity of the instrument was established by following the guidelines of Hair Jr. et al. (2009). To test content validity, a pretest was conducted with the research group and representatives from OCB/GO. Adjustments suggested by OCB/GO were made regarding terminology. It was not possible to test criterion validity because this is the first time the instrument has been applied; therefore, there are no similar studies available. Thus, according to Hair Jr. et al. (2009), criterion validation was not feasible.

The convergent validity test yielded statistical significance among the factors of the same construct. The correlation indices (Management Control Systems ≥ 0.48 and Innovation ≥ 0.833) indicated that the factors converge toward a common point. The discriminant validity test did not indicate strong correlations among any of the six factors investigated (≤ 0.59).

Data sensitivity was also tested. The distribution test showed that the skewness values (≤ 0.052) and kurtosis values (≤ 2.783) are within the limits indicated by Marco (2007) and Hair Jr. et al. (2009). Reliability testing was conducted using Cronbach's Alpha for both the factors and the constructs. The results of the test are within the limits recommended by Hair Jr. et al. (2009). The internal consistency index for management control systems presented an Alpha of 0.935, and for the innovation constructs, an Alpha of 0.973.

4 DATA ANALYSIS

4.1 Sample profile

The sample of this research presents the following characteristics regarding the respondents' positions: 27 hold the position of cooperative president, 15 hold a director position, 14 serve as managers, 10 are organizational accountants, and 22 hold positions as analysts, consultants, and assistants. Thus, it is possible to identify that at least 58% of the respondents in the sample occupy a management position.

The sample showed a higher concentration of questionnaires answered in the Central Goiás mesoregion (44%) and a lower concentration in the Northwestern Goiás mesoregion (2%). These mesoregions represent, respectively, the largest and smallest concentrations of cooperatives in the state.

4.2 Descriptive statistics

Table 4 presents the descriptive statistics of the variables related to control systems and innovation. It is possible to observe that there is no major discrepancy regarding agreement on the use of control systems, with the variable means ranging between 6.23 and 5.33 and a standard deviation of less than 2. For the innovation variables, the means ranged between 4.95 and 6.14, also with a standard deviation of less than 2.

The variable with the lowest mean was the one that asked respondents whether the cooperative's actions provided opportunities for developing skills entirely new to the sector ($\bar{x} = 4.95$ – item 29). The results of the descriptive statistics are presented below.

Table 3 - Descriptive statistics and sensitivity tests

variable	mean	standard deviation	skewness	kurtosis
Regarding the use of PERFORMANCE MEASURES (revenue, production, results/surpluses, and others) and BUDGETING, do you agree that they are:				
1. Used to identify the critical points for achieving the cooperative's goals and strategies.	6.18	1.34	-2.17	4.93
2. Used to define targets related to the critical performance points.	6.12	1.20	-1.80	3.85
3. Used to monitor progress toward the goals.	6.23	1.02	-1.48	2.36
4. Used as feedback to correct deviations from predefined goals.	6.12	1.16	-1.83	4.43
5. Used to review the main goals and to set new performance targets.	6.16	1.09	-1.65	3.16
Diagnostic control system	6.16	0.979	-1.37	1.69
6. They are recurring and frequent "demands" of management activities.	5.99	1.22	-1.68	3.53
7. They are recurring and frequent "demands" of employees' activities.	5.57	1.44	-1.13	1.22
8. They allow discussion of information about ongoing challenges and the development of action plans among managers and employees.	6.12	1.11	-1.31	1.42
9. They make it possible to focus on uncertainties that may undermine the current strategy or offer opportunities for new strategic initiatives.	5.94	1.24	-1.63	3.17
10. They facilitate the sharing of information and encourage dialogue between managers and employees.	6.05	1.20	-1.39	1.69
Interactive control system	5.93	1.01	-1.01	1.24
Regarding guidelines for BEHAVIOR, OPPORTUNITY SEEKING, and LIMITS to be observed, do you agree that:				
11. Our cooperative has a "code of conduct" to guide employee behavior.	6.06	1.36	-1.93	3.95
12. The code of conduct is based on belief systems, cooperative system standards, and legal restrictions.	5.94	1.41	-1.73	3.00
13. There are policies or guidelines that establish specific areas or limits to be observed in the pursuit and experimentation of new opportunities.	5.64	1.51	-1.36	1.67
14. Management actively communicates the risks and activities to be avoided by employees.	5.89	1.22	-1.53	3.06
15. Sanctions or penalties are applied to employees who engage in risks and activities not included in the cooperative's policy, regardless of the outcome.	5.33	1.77	-0.96	0.06
Boundary system	5.77	1.12	-1.34	2.09
16. The cooperative's values, purpose, mission, and vision are formally documented.	5.98	1.55	-1.76	2.37
17. Management actively communicates the core values to employees.	5.82	1.39	-1.21	0.92
18. To build long-term commitment, management uses formal statements of values.	5.53	1.70	-1.09	0.29
19. Employees are aware of the cooperative's core values.	6.04	1.25	-1.43	1.58
20. The cooperative's values, purpose, mission, and vision inspire our employees in the pursuit of new opportunities.	5.81	1.53	-1.38	1.37
Belief system	5,84	1,29	-1.21	1.06
ENABLING SYSTEMS	11,77	1,98	-1.02	1.31
CONSTRAINING SYSTEMS	11,94	1,83	-1.34	2.58

variable	mean	standard deviation	skewness	kurtosis
Regarding the cooperative's current actions related to the DEVELOPMENT and PROSPECTION OF NEW TECHNOLOGIES, do you agree that:				
21. It searches for technological solutions by "thinking outside the box," that is, beyond the cooperative's limits, exploring technologies different from current ones.	5.34	1.71	-1.05	0.29
22. It explains the cooperative's performance in terms of exploiting innovative technologies, that is, attributing its success to the ability to explore new technologies.	5.21	1.65	-0.92	0.18
23. It focuses on the creation of new products.	5.09	1.86	-0.78	-0.49
24. It focuses on the creation of new services.	5.31	1.62	-0.92	0.22
25. It seeks creative and differentiated ways to meet the needs of its clients.	5.69	1.53	-1.30	1.18
26. It uses new products and/or services to operate in new markets.	5.27	1.68	-1.09	0.56
27. It employs innovation to meet its clients' needs.	5.61	1.55	-1.31	1.34
28. It has acquired entirely new skills that are important for product/service innovation (such as identifying technologies, coordinating and integrating research and development, managing the product development process).	5.16	1.67	-0.74	-0.38
29. It has learned product/service development skills and processes that are entirely new to its sector (such as product design, prototyping of new products, scheduling new product launches).	4.95	1.81	-0.69	-0.47
30. There has been a strengthening of product/service innovation skills in areas where there was no previous experience.	5.01	1.78	-0.68	-0.41
Radical innovation	5.26	1.47	-1.02	0.61
Regarding the cooperative's actions related to the IMPROVEMENT and EXPLOITATION OF CURRENTLY USED TECHNOLOGIES, do you agree that:				
31. It seeks to gradually improve the quality of its products and services.	6.14	1.19	-1.85	4.15
32. It seeks to gradually reduce the (production) costs of its products and services.	5.90	1.38	-1.59	2.56
33. It seeks to gradually increase the reliability of its products and services.	6.17	1.23	-2.02	4.62
34. It aims to expand the levels of automation (automated processes) in its operations.	5.78	1.48	-1.55	2.27
35. It frequently researches the satisfaction of its current customers.	5.35	1.76	-1.01	-0.03
36. It develops its product or service offerings by carefully observing the characteristics of its current customers.	5.71	1.47	-1.25	1.24
37. It seeks to strengthen and deepen relationships with its current customers.	6.06	1.22	-1.70	3.45
38. There has been an update of current knowledge and skills for familiar products/services and technologies.	5.43	1.60	-1.00	0.32
39. There has been an enhancement of skills in product/service development processes in which the company already has significant experience.	5.48	1.62	-1.11	0.58
40. There has been a strengthening of knowledge and skills for projects that improve the efficiency of existing product/service innovation activities.	5.51	1.57	-1.25	1.22
Incremental innovation	5.75	1.21	-1.47	2.60

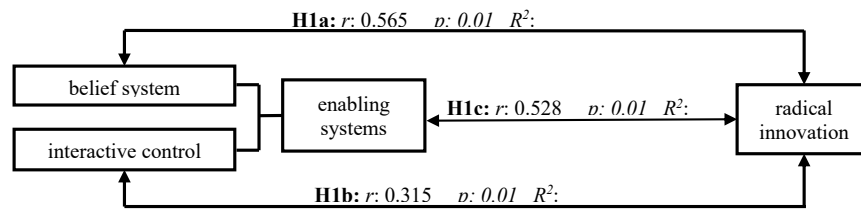
4.3 Hypothesis testings

To test the research hypotheses, the data were analyzed using correlation tests to identify the intensity and direction of the association between the research constructs, and simple linear regression tests to identify the relationship between the constructs.

H1a predicts a positive relationship between the belief system and radical innovation. Figure 3 shows that the association between the constructs is positive and significant ($r=0.565$, $p < 0.01$), providing support for confirming the hypothesis. The results also support H1b, which predicts a positive association between interactive control systems and radical innovation ($r=0.315$, $p<0.01$).

H1c predicts that the combined use of belief and interactive control systems has a positive association with radical innovation. This hypothesis was also confirmed by the regression test and the correlation test ($r=0.528$, $p<0.01$). However, when combined, the explanatory power of the model, taking the belief system as a reference, is reduced, as shown in Figure 3.

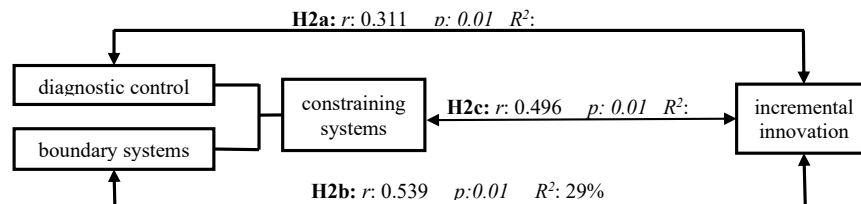
Figure 3 - Result of hypothesis test 1 (H1)



In H2a, a positive association was expected between the diagnostic control system and incremental innovation. The results confirm the hypothesis and indicate that it is positive and significant ($r=0.539$, $p<0.01$). H2b predicts a positive association between the boundary system and incremental innovation, and this was confirmed by the test ($r=0.311$, $p<0.01$).

Finally, the tests also provided support for confirming that constraining control systems are positively associated with incremental innovation in H2c ($r=0.528$, $p<0.01$). However, when combined, the explanatory power of the model, taking the boundary system as a reference, is reduced.

Figure 4 - Result of hypothesis test 2 (H2)



In H2a, a positive association was expected between the diagnostic control system and incremental innovation. The results confirm the hypothesis and indicate that it is positive and significant ($r=0.539$, $p<0.01$). H2b predicts a positive association between the boundary system and incremental innovation, and this was confirmed by the test ($r=0.311$, $p<0.01$).

Finally, the tests also provided support for confirming that constraining control systems are positively associated with incremental innovation in H2c ($r=0.528$, $p<0.01$). However, when combined, the explanatory power of the model, taking the boundary system as a reference, is reduced.

5 DISCUSSION AND ADDITIONAL TESTS

5.1 Discussion of results

The research results provide clear evidence that management control systems do not represent obstacles to innovation in cooperative organizations. Furthermore, they reinforce the role of these systems in this specific context, highlighting their positive influence on both incremental and radical innovation, and confirming what was theoretically expected, in line with the findings of McCarthy and Gordon (2011), Cruz, Frezatti, and Bido (2015), Bisbe and Malagueño (2015), Bedford (2015), Baird, Su, and Munir (2019), and Stewens, Widener, Moller, and Steinmann (2019).

Garcia, Carraro, and Dimon (2024) reinforce this perspective by demonstrating that control systems, when well aligned with the organizational context, can act as catalysts for innovation rather than as barriers. The analysis also suggests that the cooperative context, with its focus on collective well-being, strengthens the role of these systems as enablers of innovation, aligning organizational values and driving continuous improvements.

The objective of the study was to identify whether different types of management control systems—belief, interactive, boundary, and diagnostic—foster different types of innovation—incremental or radical. The evidence obtained confirms H1a, showing that the formal dissemination of cooperatives' beliefs and values inspires employee commitment to the pursuit of new opportunities, making the belief system a driver of radical innovation actions. In the cooperative context, this finding highlights how the sharing of values and goals fosters a culture of innovation, strengthens creativity, and reinforces collective commitment. The cooperative model, by its collaborative essence, amplifies the impact of control systems and underscores the importance of shared values for the implementation of innovative strategies.

According to Cruz, Frezatti, and Bido (2015), the positive association between belief systems and innovation indicates that organizations may be incorporating information on strategic innovation guidelines into their values, beliefs, and purposes. These findings corroborate the results reported by Bisbe and Malagueño (2015) and Cruz, Frezatti, and Bido (2015), showing that companies emphasize belief systems to promote organizational coherence in the face of the uncertainties and complexities of innovation-related actions.

The confirmation of H1b indicates that, in cooperative organizations, frequent dialogue with employees enables the sharing of information and discussions on challenges, thereby supporting the establishment of new plans when necessary. Kaveski and Beuren (2020) suggest that organizational creativity, when supported by an interactive control environment, can result in radical innovation without compromising the company's stability. Thus, the interactive system plays a significant role in the development of creative actions that allow cooperatives to adapt and establish new strategies in innovation contingencies. The participatory involvement of cooperative members intensifies this dynamic, fostering a collaborative environment essential for continuous innovation.

A similar result was found by Cruz, Frezatti, and Bido (2015), who identified that companies seeking to innovate their products and processes must engage in environments that foster discussions among internal members of the business. Likewise, Bisbe and Malagueño (2015) observed that creativity levels in entrepreneurial firms are influenced by interactive control systems. Kaveski and Beuren (2020) indicate that organizational creativity, when supported by an interactive control environment, can result in radical innovation without compromising the company's stability.

Hypotheses H2a and H2b were also confirmed. According to Simons (1995), the boundary system imposes important limits on organizational search activity motivated by belief systems. In this sense, the results of this research suggest that the restrictions imposed by this system do not hinder innovation actions but instead help identify opportunities aligned with intended strategies (Cruz, Frezatti, & Bido, 2015), directing individuals' actions toward the improvement and efficiency of their products, processes, and services. In cooperatives, this approach ensures a balance between innovation and sustainability, guaranteeing that resources are used efficiently without compromising development. Diagnostic control systems are essential tools for ensuring that employees follow the guidelines established by the organization. The positive relationship between these constructs reveals that, by prioritizing local knowledge and skills enhancement, organizations employ such systems in a way that provides space and motivation for experimentation, albeit within defined limits (Bedford, 2015). In cooperatives, this practice reflects a commitment to efficiency and sustainable development, ensuring that incremental innovation processes are conducted collaboratively and aligned with cooperative values. This result also aligns with Bedford's (2015) finding that companies focusing on incremental innovations tend to benefit from emphasizing diagnostic and boundary control systems.

A relevant reflection from the results of this research centers on the intensity of the correlations and relationships among the constructs analyzed. Although Bedford (2015) primarily associated innovation with interactive and diagnostic control systems, the data from this study suggest that, in the organizations analyzed, systems related to principles and values play a more prominent role compared to other types of organizations. As Schneider (2012) points out, cooperative principles are rooted in an ideological perspective that explains the complex situations of economic and social reality, giving meaning to individuals' actions, defining boundaries, and instilling security. While belief systems communicate organizational values to employees, boundary systems establish restrictions based on defined business risks (Simons, 1995). This finding reinforces the role of cooperatives in promoting sustainable innovations, as their democratic management model and collective focus favor a balanced use of control systems to drive both incremental and radical innovations. Therefore, the result aligns with the intrinsic characteristics of this type of organization.

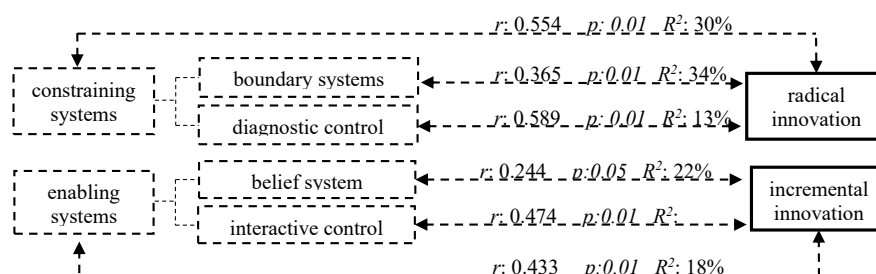
Regarding the hypotheses on the combined use of the levers, both H1c and H2c were confirmed. However, it is observed that the explanatory power of combining the systems is lower than that of the belief system or the boundary system when analyzed individually. Initially, it was expected that the combined use of belief and interactive systems would reduce the time required to transform new ideas into commercially viable outcomes (Simons, 1995). Similarly, it was believed that diagnostic and boundary systems would establish controls to prevent failures and define parameters in the search for opportunities, directing organizational efforts toward improving products, processes, and services (Cruz, Frezatti, & Bido, 2015; Bedford, 2015). In the cooperative context, this analysis suggests that the collaborative and democratic nature may influence the combined use of the levers, prioritizing isolated systems that reinforce collective values and sustainable practices. This scenario points to the need for further research on how cooperatives can integrate control

systems to enhance innovation. The result may indicate that such systems function not as complementary, as suggested by Simons (1995), but as supplementary—that is, one system is not necessarily conditioned by another. Mundy (2010) found evidence that these systems acted in a complementary manner; however, he also suggested that they possessed interdependent functions. Bedford (2015, p. 15) associates this interdependence with the fact that such systems are “frequently separated spatially and temporally.” In the cooperative context, this dynamic indicates that the flexibility and adaptability of cooperatives may facilitate the supplementary use of control systems, allowing their application according to the demands of innovation and sustainable management. This scenario underscores the potential of cooperatives to balance innovation and effective governance.

5.2 Alternative research models

Complementary tests were conducted and revealed other important insights into the relationship between control systems and innovation in cooperative organizations. Initially, based on strong evidence of the relationship and association of belief systems, values, and boundaries with innovation, tests were carried out to determine whether the trend would hold in the relationships opposite to those hypothesized.

Figure 5 - Non-hypothesized relationships



The results presented in Figure 5 show that the systems classified by Simons (1995) as constraining display a stronger correlation with both radical and incremental innovation. This finding may indicate that even the boundaries imposed by these systems do not inhibit innovation in cooperative organizations. This outcome may be linked to the fact that even the code of conduct in these organizations is based on belief systems and cooperative system standards. According to Cruz, Frezatti, and Bido (2015), belief and value systems may incorporate guidelines for innovation.

These results contrast with those found by Bedford (2015), who identified that the use of interactive control was associated with better performance in companies engaged in radical innovation, but not in incremental innovation. For Bisbe and Malagueño (2015), diagnostic control systems follow models adhering to pre-established plans and a mechanistic approach to decision-making, and therefore could not influence radical innovation actions, which are complex and fraught with uncertainty. A correlation test by industry sector and mesoregion was also conducted (see Table 7) to identify whether the region in which the cooperatives operate and their industry sector could exert any influence on the association between the constructs.

Table 4 - Correlation test by industry sector

	N	BS & RI	IC & RI	EC & RI	BO & II	DC & II	CS & II
industry sector							
Crop & livestock production	36	0.356*	-0.014	0.27	0.357*	0.178	0.352*
Credit	23	0.639**	0.422*	0.582**	0.756**	0.472*	0.731**
Health	18	0.691**	0.602**	0.768**	0.685**	0.503*	0.624**
CLT	17	0.629**	0.546*	0.583*	0.613**	0.482	0.605*
mesoregion							
Central Goiás	41	0.461**	0.156	0.351*	0.626**	0.426**	0.603**
Southern Goiás	37	0.552**	0.592**	0.633**	0.579**	0.462**	0.563**
ENN	16	0.554*	0.297	0.564*	0.547*	0.156	0.451

Note **: Significance at 0.01; *: Significance at 0.05. BS: belief system; IC: interactive control; EC: enabling control; RI: radical innovation; BO: boundary system; DC: diagnostic control; CS: constraining control; II: incremental innovation; CLT: consumption, labor, and transport; ENN: East, North, and Northwest.

In this test, we found evidence that activities with higher levels of regulation, such as credit and health, showed higher correlation indices. The credit and health sectors exhibited correlation indices considered moderate ($r > 0.400$) and strong ($r > 0.700$), while the agribusiness sector showed lower correlation intensity ($r < 0.600$).

According to research conducted by Cruz, Frezatti, and Bido (2015), the sector of activity influences how management control systems affect innovation. In this regard, the results of this study confirm that assertion. They further indicate that in the credit and health sectors, unlike the tests that did not take sector characteristics into account, enabling and constraining systems show stronger correlations with the forms of innovation. This result suggests that the industry sector influences the way the systems behave.

The test by mesoregion indicated that the region where the cooperatives are located also influences the correlation between the phenomena studied. According to the information presented in Table 10, cooperatives located in Southern Goiás show higher correlation indicators among the phenomena.

The correlation results change when organizations are classified by region. According to Schneider (2012), cooperative organizations have a commitment to the localities in which they operate and must reinvest their profits in the regions where they were generated. Thus, these differences by mesoregion, considering the characteristic mentioned above, can be explained by Porter's (1999) cluster theory. According to the author, companies operating in clusters have a material interest in the locality where they conduct business, as they achieve better alignment in the competitive field through greater synergy "in terms of technology, skills, information, marketing, and customer needs that cut across companies and industries" (Porter, 1999, p. 214).

6 CONCLUDING REMARKS

This study, conducted with 94 cooperatives, provides relevant contributions to the understanding of the relationship between control systems and innovation management in the cooperative context. The findings show that the management control system promotes improvements and the exploration of new technologies by aligning control practices with collective values and a commitment to development.

While traditional companies tend to emphasize efficiency and competitiveness (Guo, Paraskevopoulou & Sánchez, 2019), cooperatives use management control systems to foster innovation in a collaborative manner. The research revealed that both constraining and enabling systems positively influence innovation, with this relationship shaped by the cooperatives' industry sectors and geographical locations. Management control systems, from the perspective of Simons' (1994) framework, can therefore behave in either a supplementary or complementary way depending on the industry sector.

Belief and boundary systems demonstrated a central role in encouraging innovation without compromising stability, while democratic involvement strengthens the use of interactive systems, driving idea generation and continuous improvement. Diagnostic control systems ensure operational efficiency and reflect the cooperative commitment to sustainability. Mannes and Beuren (2024) argue that internal communication and effective risk management are essential elements for incremental innovation, ensuring an organizational environment that is stable and conducive to the continuous enhancement of processes.

The conclusions of this study must be interpreted in light of its potential limitations. First, due to the cross-sectional nature of the study, it is not possible to precisely infer causal relationships, as the results represent necessary but not sufficient conditions for fostering innovation—that is, there is an association between the use of control systems and innovation actions, but this does not mean that control systems alone will produce such actions. Second, despite the pretesting of the research instrument and the demonstration of statistical validity and reliability, the data may contain bias, as they are based on the perceptual judgments of managers. Furthermore, the data reflect the opinion of only one representative per cooperative. Finally, the analysis is based on data from the state of Goiás and its cooperatives, limiting the results to organizations within this specific context and setting.

Future research could examine additional control attributes for achieving innovation, such as leadership style, organizational structures, and processes, and investigate this relationship by considering other control system models. It could also expand the study by examining employees' perceptions or even assessing whether the results hold when these systems act upon cooperative members, given that they occupy a dual role: both as owners and, at the same time, as labor and input providers.

In addition, qualitative studies are suggested to explore how management control systems foster innovation. Such research could investigate why industry sectors modify the way control systems operate and how this impacts the promotion of innovation.

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ENTERPRISE RISK MANAGEMENT AND QUALITY OF ACCOUNTING INFORMATION IN LATIN AMERICA

ENTERPRISE RISK MANAGEMENT E QUALIDADE DA INFORMAÇÃO CONTÁBIL NA AMÉRICA LATINA

O artigo foi aprovado e apresentado no XLV Encontro da Associação Nacional de Pós-Graduação e Pesquisa em Administração (ENANPAD), realizado de 04/10 a 08/10 de 2021, on-line.

ABSTRACT

Enterprise Risk Management (ERM) is a comprehensive and systematic framework for identifying, assessing, and managing an organization's overall exposure to risk. This study investigates the impact of ERM adoption on the quality of accounting information among 283 public companies across Latin America from 2010 to 2019. ERM adoption was measured using the ERM Index (Gordon et al., 2009), while the quality of accounting information is evaluated through measures of value relevance (Ohlson, 1995) and conditional conservatism (Basu, 1997) were used to assess accounting information quality. The empirical results indicate that ERM adoption is positively and significantly associated with both value relevance and conditional conservatism. These findings suggest that a holistic approach to risk management enhances the informativeness and timeliness of financial reporting. This study contributes to the literature by providing empirical evidence that ERM improves key quality attributes of accounting information in emerging markets, thereby mitigating information asymmetry and facilitating more informed investment decisions.

Keywords: Risk Management. Enterprise Risk Management. Earnings Quality. Accounting Conservatism. Value Relevance.

RESUMO

O *Enterprise Risk Management* (ERM) é uma estrutura abrangente e sistemática para identificar, avaliar e gerenciar a exposição geral de uma organização ao risco. Este estudo investiga o impacto da adoção do ERM na qualidade da informação contábil entre 283 empresas de capital aberto na América Latina, de 2010 a 2019. A adoção do ERM foi mensurada utilizando o Índice ERM (Gordon et al., 2009), enquanto a qualidade da informação contábil avaliada por meio de medidas de *value relevance* (Ohlson, 1995) e conservadorismo condicional (Basu, 1997) para avaliar a qualidade da informação contábil. Os resultados empíricos indicam que a adoção do ERM está positiva e significativamente associada tanto à *value relevance* quanto ao conservadorismo condicional. Esses achados sugerem que uma abordagem holística à gestão de riscos aumenta a informatividade e a tempestividade dos relatórios financeiros. Este estudo contribui para a literatura ao fornecer evidências empíricas de que o ERM melhora os principais atributos de qualidade da informação contábil em mercados emergentes, mitigando assim a assimetria de informação e facilitando decisões de investimento.

Palavras-chave: Gestão de Riscos. *Enterprise Risk Management*. Qualidade dos Lucros. Conservadorismo Contábil. *Value Relevance*.

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1 INTRODUÇÃO

Corporate scandals remain a recurrent phenomenon that adversely affects capital markets. Accounting failures that occurred in the United States at the beginning of the 21st century (Gordon & Loeb, 2011), raised serious concerns regarding the transparency of financial reporting and the robustness of corporate governance structures, ultimately leading to the enactment of the Sarbanes-Oxley Act (SOX).

The main instrument to constrain opportunistic managerial behavior is the production of high-quality accounting information. Since the seminal study by Ball and Brown (1968), accounting scholars have focused on understanding attributes that make accounting information 'quality' (Schipper & Vincent, 2003; Dichev, Graham, Harvey, & Rajgopal, 2013; Beyer, Guttman, & Marinovic, 2019). Some studies have developed specific empirical models to evaluate these attributes, such as conservatism (Basu, 1997) and the value relevance (Ohlson, 1995) of information.

The analysis of the quality of accounting information is relevant to the organization's stakeholders, such as shareholders, creditors, government, among others, so that they can form judgment and make decisions based on the information contained in the financial report (Beyer et al., 2019). In this regard, there are also efforts by international organizations such as the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) to standardize and raise the quality of financial reporting worldwide (IASB/FASB, 2010).

In parallel with these initiatives, there has been growing concern about strengthening risk management within organizations. Historically, risk management research was fragmented, focusing on individual types of risks and isolated analytical methods (Renn, 1998; Beasley, Clune, & Hermanson, 2005).

More recently, conceptual frameworks such as Enterprise Risk Management (ERM) instituted by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), transform the risk management paradigm into a systematic and integrated approach, aligned with strategy and performance to encompass the firm's total risks (COSO, 2017).

Enterprise Risk Management (ERM) mitigates earnings management by enhancing organizational transparency and strengthening the oversight of managerial practices, thereby aligning decision-making with long-term strategic objectives. Through the implementation of structured processes for risk identification, assessment, and mitigation, ERM reduces the likelihood of accounting manipulation aimed at meeting short-term performance targets. In addition, robust governance mechanisms and more effective internal controls increase managerial accountability, rendering earnings management practices riskier and more easily detectable. As a result, ERM promotes higher quality in financial reporting and reinforces the trust of investors and other stakeholders (Jaber & Shah, 2024).

Several studies have devoted attention to the impact of ERM on managerial activity, such as firm performance and value (Hoyt & Liebenberg, 2011; McShane, Nair, & Rustambekov, 2011; Baxter, Bedard, Hoitash, & Yezegel, 2013; Berry-Stölzle & Xu, 2018), stock price informativeness (Ghafoor & Hassan, 2018) and accounting information quality, from the perspective of accruals and earnings management (Adedayo, Sylvester, & Amiolemen, 2019; Yasa, Wirakusuma, & Suaryana, 2020; Bhuiyan, Salma, Roudaki, & Tavite, 2020; Johnston & Soileau, 2020), after implementing this risk approach.

While previous research has shown that ERM can reduce earnings management and enhance financial transparency, little is known about its effect on specific attributes of accounting information quality. Two key attributes are conservatism and value relevance. Conservatism refers to the tendency of financial statements to recognize losses more quickly than gains, promoting prudence and reducing information asymmetry (Basu, 1997). Value relevance measures the extent to which accounting figures reflect firm market value, indicating how useful the information is for investors' decision-making (Ohlson, 1995). Investigating these attributes allows a deeper understanding of how ERM influences the overall quality of financial reporting.

Research results have been positive in the direction of showing that ERM reduces earnings management and improves the informativeness of accounting information. In this sense, this paper proposes to investigate the attributes of conservatism and value relevance of accounting information not covered so far. For this, the following question was developed: **what is the influence of using ERM on the quality of accounting information?**

Therefore, the objective of this research is to analyze the influence of ERM on the quality of accounting information of companies in Latin America. The sample comprises 283 non-financial public companies from Latin America, covering the period 2010–2019, totaling 2,830 firm-year observations. To achieve the purpose of the study, the use of ERM is measured by the ERMI index proposed by Gordon, Loeb, and Tseng (2009). The quality of accounting information is measured by the value relevance model of Ohlson (1995) and the conditional conservatism of Basu (1997).

Latin America provides a suitable research setting due to its economic volatility, institutional heterogeneity, and regulatory diversity, which contribute to heightened information asymmetry and agency conflicts. Moreover, capital markets in the region have adopted IFRS, improving cross-country comparability. Despite the growing importance of Latin American economies, empirical evidence on the interplay between ERM and accounting information quality remains limited, making the region an appropriate context for extending the literature (Jacomossi et al., 2019).

The study is theoretically justified by the analysis of the impacts of the integrated risk management approaches, such as ERM, on management processes, culture, strategy and their impact on performance (Nocco & Stulz, 2006). The adoption of ERM has an impact on the firm's value (Hoyt & Liebenberg, 2011) and on the quality of financial information (Johnston & Soileau, 2020) and can be a useful mechanism for decision-making by external users. Thus, this highlights the relevance of studies that analyze the relationship between the ERM and accounting information attributes in different contexts to assess the effectiveness of this system.

In summary, the main research results indicate that the relationship between ERM and value relevance is positive and significant. Likewise, the relationship between ERM and conditional conservatism is positive and significant. Therefore, the ERM contributes to raising the quality of the accounting information disclosed in addition to reducing accruals and earnings management, making the information useful for investors and minimizing information asymmetry in the market. Thus, it is concluded that the adoption of ERM is beneficial for organizations from the point of view of accounting information users.

In addition to this introduction, the paper is structured as follows. Section 2 discusses the theoretical relationship between risk management and accounting information quality. Section 3 describes the methodological procedures. Section 4 presents the empirical analysis and discussion of results. Section 5 concludes with final remarks and implications.

2 THEORETICAL FRAMEWORK

2.1 Corporate Risk Management and Enterprise Risk Management (ERM)

The concept of risk, as defined by Renn (1998), refers to the possibility of human actions or events leading to consequences that affect aspects of what human value. From an economic perspective, risk is defined by the probability of occurrence of an event and the social assessment of its undesirable effects, considering individual utilities. Accordingly, the consequences of risk are perceived as economic gains or losses that impact both individuals and society.

Traditionally, corporate risk management was silo-based, unstructured and fragmented, with each department managing its own risks independently (Arena, Arnaboldi, & Azzone, 2010). Global corporate scandals in the late 1990s prompted regulatory responses to strengthen governance, such as the Sarbanes-Oxley Act (SOX) in the US (Gordon & Loeb, 2011), along with organizational and internal control reforms to protect investors and stakeholders (Bebchuk & Weisbach, 2010). Strategic risk management has also become a key concern for boards and executives aiming to preserve the firm's business model (Drew, Kelley, & Kendrick, 2006).

In this context, the traditional, compartmentalized approach evolved into Enterprise Risk Management (ERM), a holistic and integrated framework for identifying, assessing, monitoring, and mitigating all types of risks across the organization, systematically aligned with corporate strategy and performance objectives (COSO, 2004; 2017). Unlike traditional risk management, ERM emphasizes cross-functional coordination, proactive risk mitigation, and integration with strategic and operational decision-making.

ERM employs a variety of tools and methodologies, including risk mapping, probability-impact matrices, key risk indicators (KRIs), mitigation plans, and continuous reporting to senior management. In practice, ERM can involve the creation of independent risk committees reporting to the board, the implementation of hedging strategies to manage financial exposures, and comprehensive risk assessments for strategic initiatives. These practices distinguish ERM from traditional models by promoting integration, foresight, and organization-wide accountability.

Empirical research on ERM has primarily explored its determinants, implementation processes, and managerial effectiveness (Beasley et al., 2005; Nocco & Stulz, 2006), as well as its implications for firm performance and value (Hoyt & Liebenberg, 2011; McShane et al., 2011; Baxter et al., 2013; Berry-Stölzle & Xu, 2018). For instance, Beasley et al. (2005) found that ERM implementation is positively associated with the presence of a risk director, board independence, executive support, Big Four audits, and firm size. Nocco and Stulz (2006) argue that companies adopting ERM can gain competitive advantages by managing risks holistically, aligning macro-level strategic objectives with micro-level employee actions and compensation schemes. Hoyt and Liebenberg (2011) demonstrated that US insurers with ERM achieved approximately 20% higher market value, while Berry-Stölzle and Xu (2018) found that ERM reduces the cost of equity, enhancing shareholder value.

The empirical evidence thus far suggests that ERM benefits organizations by improving governance, performance, and firm value. However, its implications for the quality of accounting information, including specific attributes such as conservatism and value relevance, remain underexplored. Examining these dimensions is crucial, as high-quality accounting information enables more informed investor decisions and greater market transparency, bridging the gap between risk management practices and financial reporting outcomes.

2.2 Quality of Accounting Information and ERM

According to the IASB and FASB, accounting information is classified as having quality when its focus is the generation of usefulness for the user of this information (IASB/FASB, 2010). To qualify as a quality aspect, accounting information must have attributes such as understandability, relevance, reliability, and comparability of the information disclosed, which are characteristics that make them useful for those who use them, such as: investors, creditors, employees, suppliers and other interested parties.

Thus, accounting information quality is a concept better understood with reference to an environmental context in which its usefulness can be classified as important to users (Schipper & Vincent, 2003). Initial studies on the quality of accounting information can be considered since the work Ball and Brown (1968), who point out the value of accounting for business and its informativeness to explain the price of shares in the capital market.

There are numerous studies in this field of knowledge, including, for example, the analysis of value relevance (Ohlson, 1995), conditional conservatism (Basu, 1997), earnings persistence (Schipper & Vincent, 2003), earnings management related to accruals or operational decisions (Beyer et al., 2019), among other topics.

According to Dichev et al. (2013), the high quality of reported earnings is related in approximately 50% to non-discretionary accruals in American companies, which are accumulated results from the recognition, measurement, and disclosure of accounting facts without interference from managers. However, about 20% of American companies manage earnings to increase investors' perception of earnings persistence, reducing the quality of information disclosed.

The lack of accounting information quality may reflect specific risks inherent to the business (Wang, Lin, Werner, & Chang, 2018), thus, recent studies focus on evaluating the relationship between risk management and the quality of disclosed financial information.

Baxter et al. (2013) investigates the factors associated with high-quality ERM and its relationship to performance in US financial services companies. The results suggest that higher ERM quality is associated with better accounting performance. Furthermore, in contrast to economic crisis environments, the returns of companies with higher quality ERM are higher during the market recovery.

The study by Wadesango, Mhaka and Wadesango (2017) relates risk management and internal auditing as mechanisms that contribute to the quality of financial reporting at universities in Zimbabwe. Among the results, it is evident that ERM's risk management and an effective corporate governance structure ensure that the criteria that universities define as quality of financial reporting can be met.

Wang et al. (2018) when examining the impact of earnings management on raising external financing in Taiwanese companies and include risk management with ERM as a moderating factor in this relationship. The results suggest that companies with weaker ERM programs were more likely to use earnings management from real activities to raise external financing. Thus, the effectiveness of ERM relates to reducing earnings management and raising the quality of earnings.

Adedayo et al. (2019) analyze the impact of ERM on the accounting quality of Nigerian financial companies. The results indicate that there is no significant association between risk management and accounting information quality during the pre-ERM period. However, in the period after ERM implementation, this relationship became positive and significant, indicating that the adoption of ERM improves the quality of accounting information, by reducing discretionary accruals and earnings management.

As a result of previous studies, the literature suggests the existence of a positive association between the adoption of corporate risk management by the ERM and the quality of accounting information in financial reports, with an emphasis on capital market agents and specifically on the informativeness of the share price (Baxter et al., 2013; Wang et al., 2018; Adedayo et al., 2019).

Following Ball and Brown (1968), Schipper and Vincent (2003) and Dichev et al. (2013), it is known that accounting income reflects the result generated by the operation and is related to future cash flows, being a proxy for the informativeness of stock prices. Therefore, it is expected that an increase in the informational capacity of earnings from an integrated risk management for firms that adopt ERM. Based on the above, the following research hypothesis was developed:

H1 - There is a positive relationship between the use of ERM and the value relevance of accounting information.

Another attribute of accounting information quality that presupposes caution in the judgment necessary for accounting estimates in conditions of uncertainty is conservatism (IASB/FASB, 2010). According to Basu (1997), from the perspective of information transparency, companies can be encouraged not to disclose reliable information for the capital market, depending on the managers' incentives, when they should be influenced by conservative information disclosure practices. Also, according to the author, the condition of accounting conservatism can reduce information asymmetry in the market.

Ghafoor and Hassan (2018) analyze factors that influence the informativeness of stock prices of companies in the region of Islam, segregating the sample into firms that comply with the Shari'ah code of practice of Islam and those that do not. The results indicate that practices established by religion do not reduce information asymmetry in the capital market. However, ERM practices have a negative impact on stock price synchronicity, which suggests for the context analyzed that ERM can reduce asymmetric information and increase stock price informativeness – indicating an improvement in the quality of accounting information. This result also suggests that ERM can reduce market information asymmetry through other uninvestigated channels, such as accounting conservatism.

Yasa, Wirakusuma and Suaryana (2020) searched for empirical evidence on the effect of leverage, free cash flow, corporate governance, growth, and risk management on the quality of results of Indonesian banks. The results indicate that the variables leverage, managerial ownership and risk management have a negative and significant effect on the quality of results. The free cash flow and growth variables have a positive and significant effect on earnings quality. Thus, they conclude that a high level of risk management indicates that bank administrators are conservative in relation to corporate profits reported to the market.

Bhuiyan et al. (2020) examine the association between the existence of a risk committee, quality of financial reporting and auditing prices in publicly traded companies in Australia. Among the results, it is mentioned that the existence

of a risk management structure via the risk committee reduces the level of discretionary accruals, reducing the degree of earnings management and increasing the quality of reported accounting information. The excessive use of accruals reduces the quality of earnings and is opposed to the notion of conservatism, which advocates providing reliable information that is not overly optimistic.

Complementarily, Johnston and Soileau (2020) examine the association between an ERM corporate risk management program and the error in estimating accounting accruals in publicly traded US companies. The results indicate that having an ERM program reduces the accrual estimation error.

The studies surveyed are consistent with the notion that ERM improves executives' understanding of business processes and reduces potential risks. It was shown that the use of ERM can reduce asymmetric information (Ghafoor and Hassan, 2018) and the use of accounting accruals that modify the reported accounting profit (Bhuiyan et al., 2020; Johnston & Soileau, 2020; Yasa et al., 2020).

Conditional accounting conservatism is an attribute of accounting information quality that reflects the tendency of financial statements to recognize losses more promptly and fully than gains (Basu, 1997; IASB/FASB, 2010). This prudential approach promotes reliability and transparency, as it reduces the likelihood of overstating assets or profits and mitigates information asymmetry between managers (information suppliers) and investors or other stakeholders (information users). More conservatism enhances the quality of financial information by providing a more cautious and credible representation of a firm's performance and risk exposure. Conversely, a lower degree of conservatism may inflate reported earnings or asset values, increasing the potential for earnings management and reducing the usefulness of information for decision-making.

However, differences in the level of conservatism between information suppliers and consumers can create informational problems. If managers are more conservative than investors expect, the reported results may underestimate the firm's performance, potentially leading to overly cautious investment decisions or undervaluation of assets. On the other hand, if managers are less conservative than the market anticipates, information may appear overly optimistic, increasing information asymmetry and the risk of misinformed decisions. The alignment between accounting conservatism and users' expectations is therefore crucial to ensure the usefulness and credibility of financial reporting (Salehi et al., 2021).

Enterprise Risk Management (ERM) can influence accounting conservatism by providing managers with a systematic and integrated view of internal and external risks. By anticipating potential adverse events, ERM encourages more prudent accounting estimates and the timely recognition of losses, reducing overly optimistic projections and mitigating earnings management. In this context, ERM can strengthen conditional conservatism and, consequently, enhance the quality of accounting information (Wang et al., 2018; Johnston & Soileau, 2020).

Based on this reasoning, the following hypothesis is proposed:

H2 - There is a positive relationship between the use of ERM and conditional accounting conservatism.

Therefore, based on the formulated hypotheses, a positive association is expected between ERM and value relevance, as well as between ERM and accounting conservatism. In summary, this section outlined the conceptual foundations of ERM as an integrated approach to risk management, accounting information quality, thereby substantiating the theoretical linkage between these constructs and supporting the development of the study's hypotheses. The following section describes the research design, data, and methodological procedures employed in the analysis.

3 METHODOLOGY

3.1 Design and sample

This study is classified as descriptive, documentary, and quantitative (Marconi & Lakatos, 2004). It relies on secondary data obtained from the annual financial statements published by non-financial public companies in Latin America, available in the Eikon Refinitiv® database, covering the period from 2010 to 2019.

The 2010-2019 timeframe was selected for three main reasons. First, it provides a sufficiently long horizon to capture variations in corporate governance practices, risk management adoption, and accounting conservatism across different economic cycles, thereby allowing more robust statistical inferences. Second, this decade encompasses significant institutional and regulatory developments in Latin American capital markets, including the post-2008 global financial crisis adjustments and the strengthening of disclosure requirements, which directly influence both ERM implementation and financial reporting quality. Third, data availability and comparability across firms in the Eikon Refinitiv® database is more consistent during this period, ensuring reliability in the construction of the variables and enhancing the validity of the empirical analysis.

The research population consists of 1,083 companies from Central and South America. Firms with missing data necessary for variable computation or with negative shareholders' equity were excluded, resulting in a sample of 283 firms and 2,830 firm-year. Afterwards, outlier observations with extreme values in 3 standard deviations for the variables were excluded, leaving 283 firms and 2,812 observations in the final sample.

Table 1 presents the study sample by country within Latin America. The countries with largest representation in the sample are Argentina, Brazil, Chile, Mexico, and Peru.

Table 1. Sample of companies by country in Latin America

#	Country	Final Sample	
		Number of firms	%
1	Argentina	40	14.1%
2	Brazil	70	24.7%
3	Cayman Islands	1	0.4%
4	Chile	74	26.1%
5	Colombia	4	1.4%
6	Mexico	54	19.1%
7	Peru	38	13.4%
8	Puerto Rico	1	0.4%
9	British Virgin Islands	1	0.4%
	Total	283	100%

Source: data research (2025).

After presenting the design and sample, the next section presents the variables used in the research.

3.2 Variables

3.2.1 ERM Index

To measure the use of Enterprise Risk Management by companies, an independent variable of the study, the ERM Index (ERMI) proposed by Gordon et al. (2009). This index is based on the structure of COSO (2004), calculated from four indicators in the dimensions: strategy, operation, reporting and compliance and is presented in Equation 1.

$$ERMI = \sum_{k=1}^1 \text{Estrategy} + \sum_{k=1}^1 \text{Operation} + \sum_{k=1}^1 \text{Report} + \sum_{k=1}^1 \text{Conformity} \quad (1)$$

The strategic dimension represents the creation of competitive advantage and achievement of strategic objectives, according to Jacomossi et al. (2019) and is expressed in Equation 2.

$$\text{Estrategy} = \frac{\text{Sales} - \mu_{\text{sales}}}{\sigma_{\text{sales}}} \quad (2)$$

Where refers to the firm's annual sales; is the average sales of all firms in the same industry; and is the standard deviation of sales in the industry. In ERM, a firm's strategy is often assessed through deviations in sales, as revenue performance directly reflects the execution of strategic objectives. Deviations highlight potential strategic risks, such as shifts in demand, competitive pressures, or internal inefficiencies, allowing proactive adjustments. This approach provides a tangible indicator of how well the firm's strategy aligns with actual outcomes and integrates risk management with strategic planning.

The operation dimension is related to operational efficiency that reduces the risk of failure of the business system (Gordon et al., 2009) The dimension calculation is expressed in Equation 3.

$$\text{Operation} = \frac{\text{Sales}}{\text{Total Assets}} \quad (3)$$

Where refers total assets reported on the firm's balance sheet as of December 31. In ERM, operational performance is often measured as sales over total assets to assess how efficiently a firm generates revenue from its resources. This ratio helps monitor strategic execution, identify potential risks such as underutilized assets or market fluctuations, and integrate risk assessment with operational performance. By linking revenue to total assets, ERM provides a tangible indicator of strategic and operational risk exposure.

The reporting dimension refers to the adequacy of financial reporting that reduces the risk of entity controls (Gordon et al., 2009). This indicator is formed by the relationship between normal and abnormal accruals, expressed in Equations 4, 5 and 6.

$$\text{Report} = \frac{(\text{Normal Accruals})}{(\text{Normal Accruals}) + (\text{Abnormal Accruals})} \quad (4)$$

The calculation of normal accruals (Jacomossi et al., 2019) is obtained by Equation 5.

$$AT_{ij} = (\Delta AC - \Delta Cx) - (\Delta PC - \Delta Div) - Dep \quad (5)$$

Where AT refers normal accruals, refers annual variation of the firm's current assets account; is annual variation of the firm's cash and cash equivalents account; is variation of the firm's current liabilities account; refers change in the firm's short-term debt account; is the sum of depreciation and amortization. The abnormal accruals (Jacomossi et al., 2019) are calculated by Equation 6.

$$ACT = \alpha_1 \left(\frac{1}{TA_{t-1}} \right) + \alpha_2 (\Delta REV_t - \Delta REC_t) + \alpha_3 (PPE_t) + \varepsilon_t \quad (6)$$

Where refers Total Accruals; is total assets of firm i in the year t-1; is variation in firm i's gross revenue between years t and t-1, weighted by total assets at the end of period t-1; refers change in accounts receivable from firm i between years t and t-1, weighted by total assets at the end of period t-1; is fixed assets at firm i in year t, weighted by total assets at the end of period t-1; is regression residual for firm i in year t.

The compliance dimension reflects the firm's compliance with laws and regulations applicable to the business. The greater the compliance management, the less likely the overall risk of business system failure (Gordon et al., 2009; Jacomossi et al., 2019). Equation 7 expresses the calculation of this indicator.

$$\text{Conformity} = \frac{\text{Auditor's fees}}{\text{Total Assets}} \quad (7)$$

Where Auditor's fees refer to the payments made to the independent auditor of firm i in year. The compliance dimension is measured as auditor fees over total assets, reflecting the firm's investment in external oversight to ensure adherence to laws and regulations. Higher relative spending on audits indicates stronger monitoring and control mechanisms, which reduces the likelihood of regulatory breaches and system failures, capturing the effectiveness of the firm's compliance management.

Together, these four dimensions - strategy, operations, reporting, and compliance - provide a comprehensive measure of the firm's ERM implementation. While each dimension captures a specific aspect of risk management, their combination reflects the integrated approach advocated by COSO (2004), linking strategic planning, operational efficiency, financial reporting quality, and regulatory compliance into a unified framework.

3.2.2 Value relevance and conditional conservatism

To measure the quality of accounting information, a dependent variable of the study, two variables were constructed: i) value relevance of the information, which informs the significance of accounting information to explain stock prices; and ii) conditional conservatism, which measures the timely recognition of losses in relation to gains, indicating the quality of accounting information through the timeliness of reported information. Complementarily, size was considered as a control variable in the study.

Value relevance was assessed using the Ohlson (1995) valuation model, as specified in Equation 8.

$$P_{it} = \beta_0 + \beta_1 LPA_{it} + \beta_2 PLA_{it} + \varepsilon_{it} \quad (8)$$

Where P_{it} is the share price adjusted by dividends and stock splits of firm i in period t ; LPA_{it} is the earnings per share of firm i in period t ; PLA_{it} is the equity per share of firm i in period t . In this research, firms with value relevance of the identified accounting information receive value 1 as a dummy variable for the regression calculation.

After estimating Equation (8), a firm-period observation is assigned a dummy value of 1 if the estimated accounting information significantly explains its stock price during the period, indicating that the information is value relevant. Otherwise, the firm receives a 0, signaling that the accounting information did not exhibit significant value relevance in that period.

Conditional conservatism was measured by the Basu (1997) model, which relates reported accounting earnings to stock returns, specified in Equation 9.

$$LL_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 R_{it} * DR_{it} + \varepsilon_{it} \quad (9)$$

Where LL_{it} is the net profit of firm i in period t scaled by the market value in $t-1$; DR_{it} dummy variable where 1 represents a negative return in period t and 0 a positive return in period t ; R_{it} change in the market value of firm i in period t scaled by the market value in $t-1$.

After estimating Equation (9) for each firm-period observation, a firm is assigned a dummy value of 1 if the coefficient β_3 (the interaction between returns and the negative-return dummy) is positive and statistically significant. This indicates that losses are recognized more promptly than gains, reflecting conditional conservatism. If β_3 is not positive or not significant, the firm receives a 0, indicating the absence of conditional conservatism for that period.

The premise of the conditional conservatism model is that the market timely recognizes economic losses contained in the reported earnings, presenting a positive and higher coefficient for β_3 , which expresses the interaction $R_{it} * DR_{it}$, in relation to DR_{it} , which captures the response of profit when the return is positive.

In this case, profits will be conservative when β_3 captures the response of the relationship between accounting result and return when returns are negative or when β_3 is greater than zero and statistically significant. Therefore, β_3 indicates whether losses are recognized more promptly than gains, signaling conditional conservatism. Firms exhibiting conditional conservatism are assigned a dummy of 1; otherwise, 0.

Figure 1 summarizes the definitions, calculations, and expected signs of all variables used in the study.

#	Variable	Calculation	Expected Ratio	Expected Ratio
Dependent	Value Relevance (VR)	-The RV is estimated by Equation 8. - A dummy variable 1 is assigned if it presents VR or 0 otherwise.	N/A	Ohlson (1995)
	Conditional Conservatism (CC)	-The CC is estimated by Equation 9. - A dummy variable 1 is assigned if it presents CC or 0 otherwise.	N/A	Basu (1997)
Independent	Enterprise Risk Management (ERMI)	Enterprise Risk Management Index - Equation 1	(+)	Gordon et al. (2009)
Control	Size (SIZE)	Natural logarithm (total gross revenue)	(+)	Jacomossi et al. (2019)

Figure 1. Research variables

Note: N/A = not applicable, because variable dummy variables no expected sign.

Source: own elaboration (2025).

After describing the research variables, the next subsection presents the data analysis procedures used.

3.3 Data analysis procedures

Among the data analysis procedures, an initial descriptive summary of the variables was performed. Subsequently, Pearson's linear correlation was employed to examine the strength and direction of associations between the variables. Finally, the multiple linear regression technique (OLS) was applied, with robust standard errors estimated using White's correction.

To examine the relationship between ERMI, VR, and CC, four regression models were estimated, differing by the inclusion of the control variable SIZE. For each model, the OLS assumptions of residual normality, homoscedasticity, absence of multicollinearity, and serial autocorrelation (Hsiao, 2014) were evaluated.

Equations 11 and 12 specify the relationship between ERMI and value relevance to test Hypothesis 1, whereas Equations 13 and 15 represent the relationship between ERMI and conditional conservatism to test Hypothesis 2.

$$\text{Model 1: } VR_{it} = \beta_0 + \beta_1 ERMI_{it} + \varepsilon_t \quad (11)$$

$$\text{Model 2: } VR_{it} = \beta_0 + \beta_1 ERMI_{it} + \beta_2 SIZE_{it} + \varepsilon_{it} \quad (12)$$

$$\text{Model 3: } CC_{it} = \beta_0 + \beta_1 ERMI_{it} + \varepsilon_{it} \quad (13)$$

$$\text{Model 4: } CC_{it} = \beta_0 + \beta_1 ERMI_{it} + \beta_2 SIZE_{it} + \varepsilon_{it} \quad (14)$$

Where VR_{it} is the value relevance measure of the accounting information of company i in period t ; CC_{it} is the measure of conditional conservatism of the accounting information of company i in period t ; $ERMI_{it}$ is the use of ERM by company i in period t ; $SIZE_{it}$ is the size of company i in period t ; and $\beta_0, \beta_1, \beta_2$ are the regression parameters and $\varepsilon_t, \varepsilon_{it}$ is the residual of the regression.

Although only firm size was included as a control variable, this choice aimed to maintain a parsimonious model and facilitate interpretation with the available sample. It is acknowledged, however, that the omission of additional controls may introduce endogeneity concerns, as unobserved factors could simultaneously affect both dependent and independent variables. More sophisticated statistical models, such as those used by Yasa, Wirakusuma, & Suaryana (2020), Bhuiyan, Salma, Roudaki, & Tavite (2020), and Johnston & Soileau, allow for panel effects, heteroskedasticity adjustments, or weighted regressions, but were not employed here to preserve methodological transparency and consistency with classical approaches (Ohlson, 1995; Basu, 1997).

Similarly, although the dependent variables are dummies and could be estimated using Logit or Probit models, linear regressions were preferred for direct interpretability of coefficients and to focus on the conversion of value relevance and conditional conservatism measures into dummy variables. Future research may extend the model by incorporating additional controls and employing more advanced econometric techniques to address these limitations.

4 ANALYSIS AND DISCUSSION OF RESULTS

Table 2 presents the descriptive summary of the independent variables ERMI and SIZE. The average level of ERMI adoption across the sample is 0.48, which is lower than the value reported by Jacomossi et al. (2019) in a study focused on the Brazilian context, where the mean was 0.98. The average firm size, measured by gross revenue, is approximately US\$ 738 million, obtained from the antilogarithm of 20.42.

The average profit of the firms corresponds to approximately 5% of their market value over the period. Around 10% of the firms reported negative returns. Furthermore, the coefficient β_3 , estimated from the Basu (1997) model, was approximately 3%, greater than zero and statistically significant, indicating the presence of conditional conservatism on average among the sample firms.

In estimating value relevance using the Ohlson (1995) model, the regression intercept (β_0) was found to be statistically significant and approximately ten times greater than the coefficients of the independent variables. This result suggests that accounting information, on average, is incorporated into the stock prices of the firms in the sample. The average share price was US\$ 4.16, while the average book value per share was approximately three times the equity per share.

Table 2. Descriptive summary of study variables

	Minimum	Mean	Median	Maximum	Standard Deviation
Conditional Conservatism (CC)					
LL	-9.69	0.05	0.07	8.71	0.71
DR	0.00	-	-	1.00	-
R	-1.00	0.10	-0.03	8	0.65
R*DR (*)	-1.00	0.03	-	8	0.40
Value Relevance (VR)					
P (***)	0.00	4.16	1.41	99.45	8.58
LPA	-96.46	-0.04	0.05	66.98	3.51
PLA	-61.30	3.15	0.98	99.49	8.94
Enterprise Risk Management Index and controls					
ERMI	-5.97	0.48	0.54	5.85	1.04
SIZE	10.91	20.42	20.15	43.05	2.79

Significance level: 1% (*), 5% (**) and 10% (***).

Source: data research (2021).

Subsequently, Pearson's correlation analysis was conducted, as presented in Table 3. The results indicate a weak but statistically significant association between CC and ERMI; a weak and positive, though not significant, correlation between ERMI and SIZE; and a weak and negative, yet not significant, relationship between ERMI and VR. Overall, there is no evidence of strong correlations among the variables.

Table 3. Pearson Correlation

	ERMI	VR	CC	SIZE
ERMI	1.00			
VR	-0.00	1.00		
CC	0.04*	-0.03***	1.00	
SIZE	0.02	-0.15*	0.02	1.00

Significance level: 1% (*), 5% (**), and 10% (***).

Source: data research (2025).

Before interpreting the regression results, diagnostic tests were conducted to ensure the adequacy and reliability of the estimated models (M1–M4), as presented in Table 4. Residuals in all models were normally distributed, indicating that OLS assumptions regarding error terms are not violated. The Variance Inflation Factor (VIF) ranged from 1.16 across all models, well below the common threshold of 10, suggesting no multicollinearity issues.

Heteroscedasticity tests, such as the Breusch-Pagan test, confirmed constant variance of residuals, while the Durbin-Watson statistic indicated no autocorrelation for M1 (2.01) and mild autocorrelation for M2–M4 (1.42–1.43). Finally, the Hausman test supported the use of the fixed-effects specification, ensuring estimator consistency. Having confirmed the adequacy of the models, the regression results are now presented.

The M1 model has an explanatory power of 17% (R^2) and indicates that there is a positive but non-significant relationship between ERMI and CC. The M2 model, with an R^2 of 52%, indicates a positive and significant relationship between ERMI and CC, of positive and significant at the 10% level. Thus, controlled by size, there is a positive relationship between ERMI use and accounting conservatism in Latin American firms – not being rejected H1.

The M3 model has an R^2 of 52% and points to a positive and significant relationship between ERMI and VR up to 10% of statistical significance. Likewise, M4 confirms the positive relationship between ERMI and VR, considering control for size, suggesting that there is a positive relationship between the use of ERM and the value relevance of accounting information in Latin American firms. Therefore, H2 is not rejected from the study.

Table 4. OLS regression with fixed effects

	Conservatism Conditional (CC)		Value Relevance (VR)	
	M1 (Eq. 11)	M2 (Eq. 12)	M3 (Eq. 13)	M4 (Eq. 14)
C	0.08 (0.00)*	1.60 (0.00)*	0.81 (0.00)*	1.60 (0.00)*
ERMI	0.00 (0.66)	0.01 (0.08)***	0.01 (0.08)***	0.01 (0.08)*
SIZE	-	-0.03 (0.00)*	-	-0.03 (0.00)*
VIF	1.16	1.16	1.16	1.16
R ²	0.17	0.52	0.52	0.52
F Stat	3.05*	11.51*	11.49*	11.51*
Durbin-Watson	2.01	1.43	1.42	1.43
Hausman test	1.47	-	0.00	-

Significance level: 1% (*), 5% (**), and 10% (***).

Source: data research (2025).

The results indicate a positive relationship between the adoption of Enterprise Risk Management (ERM) and the value relevance of accounting information in Latin American firms. This suggests that firms implementing an integrated risk approach, as captured by the ERMI, enhance the informativeness of stock prices through the timely and reliable reporting of earnings, a finding particularly relevant in the context of developing economies where market efficiency is lower compared to developed markets.

Consistent with the studies of Hoyt and Liebenberg (2011), Berry-Stölzle and Xu (2018), and Adedayo et al. (2019), ERM adoption enables firms to anticipate and manage specific risks, allowing managers to develop competitive strategies that improve overall performance. Market participants recognize these benefits, as evidenced by the positive association between ERM implementation and the market's response to reported accounting information.

Additionally, the analysis demonstrates a positive relationship between ERM and conditional accounting conservatism, indicating that firms with robust risk management practices tend to recognize losses more promptly than gains. This finding aligns with the holistic notion of risk encompassed in the ERM framework (Nocco & Stulz, 2006), which fosters a corporate culture of proactive risk assessment and cautious decision-making. The conservative accounting posture observed in these firms suggests that the principles of prudence extend beyond operational and strategic management to the reporting of financial information, thereby improving the reliability and credibility of accounting data.

These results corroborate prior findings by Baxter et al. (2013), who associate higher ERM quality with improved accounting performance, and extend the work of Ghafoor and Hassan (2018) by demonstrating that conditional conservatism reduces information asymmetry. Moreover, the findings complement Yasa et al. (2020), highlighting that risk management contributes to the accounting conservatism of non-financial firms in emerging markets.

In conclusion, this study provides empirical evidence that ERM not only strengthens corporate risk management but also enhances key attributes of accounting information quality - namely, value relevance and conditional conservatism. These improvements, in turn, contribute to greater transparency and informativeness in capital markets, supporting more informed investment decisions in emerging economies.

5 FINAL REMARKS

Integrated and systematic risk management represents a contemporary approach to corporate risk, developed in response to global corporate scandals at the turn of the 21st century, aiming to strengthen corporate governance and managerial decision-making. The Enterprise Risk Management (ERM) framework exemplifies this integrated approach, assessing the totality of organizational risks and aligning them with firm strategy and performance.

This study addressed an emerging research gap regarding the impact of ERM on accounting information quality, focusing on attributes less explored in the literature - value relevance and conditional conservatism. Using a sample of 283 non-financial public companies in Latin America over the period 2010–2019 (2,830 observations), ERM adoption was measured of the ERMI (Gordon et al., 2009), value relevance by Ohlson's model (1995), and conditional conservatism by Basu's model (1997).

The results indicate a positive and significant relationship between ERM adoption and both the value relevance and

conditional conservatism of accounting information. These findings suggest that firms with integrated risk management practices provide more informative and timely financial reporting, enhancing stock price informativeness and reducing information asymmetry in emerging capital markets.

The positive association between ERM and conditional conservatism indicates that firms with structured risk management frameworks tend to recognize economic losses more promptly than gains. This finding reflects a cautious managerial approach to risk, which permeates the accounting function, resulting in timely reporting and conservative accounting estimates. Such behavior aligns with the premise of integrated ERM that encourages proactive identification of risks and strategic planning to mitigate potential losses, corroborating studies by Baxter et al. (2013) and Yasa et al. (2020).

Taken together, the findings indicate that ERM adoption simultaneously enhances both the relevance and conservatism of accounting information. While value relevance improves the informativeness of financial reporting for market participants, conditional conservatism ensures a prudent and timely recognition of economic losses, mitigating the risks of overly optimistic accounting estimates. This dual effect underscores the role of ERM as a governance mechanism that strengthens both managerial decision-making and external reporting reliability.

These results are particularly pertinent in the context of Latin America, where market volatility, institutional weaknesses, and less mature governance practices can exacerbate information asymmetry. By adopting ERM, firms in this region appear better equipped to manage uncertainties and provide reliable accounting information, thereby increasing investor confidence and promoting more efficient capital allocation.

The positive and significant relationship between ERM adoption and value relevance suggests that firms implementing integrated risk management enhance the informativeness of reported earnings for investors. By systematically identifying and mitigating risks, these firms reduce uncertainty and signal greater reliability of accounting information. This outcome is consistent with prior studies in developed markets, such as Hoyt e Liebenberg (2011), and extends the evidence to Latin American firms, demonstrating that ERM adoption can strengthen market perception and contribute to higher stock price informativeness even in more volatile and less mature markets.

This study further contributes to the literature by extending the ERMI framework to a longitudinal setting over ten years and applying it in a Latin American context, demonstrating its relevance for constructing a robust metric of ERM adoption in emerging economies.

From a practical standpoint, the findings suggest that managers who implement comprehensive ERM systems can enhance both operational oversight and financial reporting quality. Investors benefit from increased transparency and informativeness of stock prices, while researchers gain empirical evidence on the positive effects of ERM adoption in emerging economies, supporting and extending prior studies focused on developed markets.

Limitations of the study include incomplete financial data for some firms across Latin American countries and reliance on secondary measures to capture ERM adoption. Future research may explore the relationship between ERM and other attributes of accounting information quality, such as reliability, comparability, and understandability, and test alternative metrics for capturing integrated risk management practices.

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REVIEW

RESENHA

Gibbons, B. (2024). The financially material effects of mandatory nonfinancial disclosure. *Journal of Accounting Research*, 62(5), 1711-1754. <https://doi.org/10.1111/1475-679X.12499>

ABSTRACT

The article by Gibbons (2024) investigates the financial effects of mandatory disclosure of non-financial information, focusing on environmental and social factors (E&S). The study encompasses the analysis of the implementation of regulations in various countries, exploring how this obligation impacts the investment decisions of institutional investors and the financing and resource allocation decisions of companies. The results indicate that non-financial disclosure increases investment in R&D and encourages innovative projects, attracts institutional investors with long-term orientations and E&S preferences, which modifies the financing profile of organizations. The research suggests that these changes produce real and material effects, even when the disclosed information related to E&S does not have a direct financial impact.

Keywords: ESG Disclosure, institutional investors, innovation, sustainability, real effects.

RESUMO

Gibbons (2024) investiga os efeitos financeiros da divulgação obrigatória de informações não financeiras, com foco nos fatores ambientais e sociais (E&S). O estudo abrange a análise da implementação de regulamentações em diversos países, explorando como essa obrigatoriedade impacta investimentos de investidores institucionais e decisões de financiamento e alocação de recursos das empresas. As evidências indicam que a divulgação não financeira aumenta o investimento em pesquisa e desenvolvimento (P&D) e incentiva projetos inovadores, atrai investidores institucionais com orientações de longo prazo e preferências E&S o que modifica o perfil de financiamento das organizações. A pesquisa sugere que essas mudanças geram efeitos reais e materiais, mesmo quando as informações divulgadas referentes a E&S não têm impacto financeiro direto.

Palavras-chave: divulgação ESG; investidores institucionais; inovação; sustentabilidade; efeitos reais

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Brian Gibbons' (2024) study, published in the *Journal of Accounting Research*, examines the financial impacts of the mandatory adoption of non-financial disclosure standards focused on environmental and social (E&S) aspects. This topic has gained prominence alongside the growth of socially responsible investment, which already enjoys strong adherence in the United States. Such trends have prompted regulators and institutional investors to pressure companies into adopting more transparent and comparable practices regarding their environmental and social responsibilities. Although debates persist about the financial materiality of E&S information, Gibbons' (2024) investigates how the mandatory introduction of these standards across countries can influence the attraction of institutional investors, The allocation of resources toward innovation, and corporate financing decisions.

To examine this relationship, the author employs a difference-in-differences (DiD) approach, considering 40 mandatory disclosure regulations implemented in 34 countries over two decades (2000–2019). This methodology enables a comparison between firms affected by the regulations and those in countries where E&S standards were not adopted, controlling for firm- and year-specific effects.

The study's theoretical framework rests on the premise that high-quality financial disclosure reduces information asymmetry and improves investment decisions, thus lowering capital costs and enhancing investor appeal. Extending this logic to non-financial information, the author posits that mandatory ESG (environmental, social, and governance) reporting may generate similar effects by clarifying companies' long-term practices and risks, while catering to institutional investors' sustainability preferences.

Within this framework, the author investigates the hypothesis that clientele effects, referring to investors' preference for sustainable investments that direct their resources to companies that meet these requirements, can shape corporate behavior. The study's results are divided into three main dimensions: the effect of mandatory E&S disclosure on institutional ownership, investment decisions, and financing choices..

First, the author assesses whether mandatory E&S standards alter shareholder composition by examining institutional investor holdings in affected firms. The analyses show that, following regulation implementation, institutional ownership increases by an average of 0.80%, indicating that such information is deemed relevant by large-scale investors. This change appears to stem from investors valuing sustainable practices, suggesting that pressure for improved ESG disclosure is not merely rhetorical but indeed influences decision-making. This finding suggests mandatory ESG disclosure may attract a more committed, long-term oriented shareholder base.

Second, the study explores the impact of E&S disclosure on investment decisions, particular focus on innovation. The findings demonstrate that firms subject to these regulations increase their research and development (R&D) expenditures by approximately 4.8%. Robustness checks using an alternative R&D variable confirm these results. This increase in innovation is consistent with earlier findings, aligning with the expectations of long-term investors who favor companies committed to sustainable practices and willing to allocate resources in long-term projects.

The third dimension examines the impact of ESG regulations on financing decisions. Findings show that, after the adoption of mandatory disclosure, firms increased equity issuance by 15.6% while reducing debt issuance. This shift suggests a preference for raising capital through equity rather than increasing leverage, potentially linked to the attractiveness that greater ESG transparency holds for long-term investors, particularly in equity markets. The study argues that this effect may lower the cost of equity capital for these firms.

To confirm the robustness, Gibbons (2024) conducts several additional tests to mitigate biases in treatment group comparisons across different periods. These tests show that the findings remain consistent over time and across contexts, reinforcing their validity. Additional tests with alternative variables further corroborate the results.

The analyses indicate that mandatory E&S disclosure did not significantly reduce informational asymmetry between investors and managers, suggesting that the observed clientele effect results from attracting sustainability-oriented investors. This clientele mechanism is a key contribution of the study, highlighting the central role of institutional investors with ESG preferences in shaping firms' financing profiles and innovation strategies.

The study's strengths include a robust empirical approach and a broad, diverse dataset covering different regulatory contexts and time periods. The detailed analysis of the clientele effect is also innovative, providing insight into how the presence of ESG investors can influence firms' investment and financing decisions.

However, one limitation is that the heterogeneous regulatory environments of the countries studied may constrain the generalizability of the results to firms in other sectors or in countries with different governance practices. The study also does not examine sector-specific impacts, such as in energy or technology, where ESG practices may be even more relevant and decisive for institutional investors.

In sum, Gibbons' (2024) research contributes to the literature on the real effects of mandatory ESG disclosures by showing that transparency in environmental and social information has a material impact on financial decisions and attracts a specific, long-term investor base. These findings suggest that mandatory ESG disclosure policies can be an important tool for attracting sustainability-oriented investors and encouraging firms to allocate resources toward sustainable innovation. For policymakers, the study provides evidence that mandatory E&S disclosure can enhance companies' appeal to long-term investors, fostering a more sustainability-oriented and innovation-driven corporate environment.

REFERÊNCIA

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