Determinants of revenue diversification in Brazilian credit unions

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Abstract

Objective: This study investigated the determinants of revenue diversification in Brazilian credit unions.

Method: A sample of 482 singular credit unions belonging to the Sicoob, Sicredi, and Unicred systems was addressed from 2009-2 to 2018-2. The factors determining diversification were obtained using a multiple regression model in two stages, estimated by the Systemic Generalized Method of Moments.

Results: Return on Equity, Net Interest Margin, and General Expenses appeared as significant determinants of diversification in credit unions. These findings indicate that more profitable cooperatives are more likely to diversify; cooperatives would compensate for a decrease in traditional sources of income with non-traditional incomes, and that greater revenue diversification may be one of the consequences of increased operating expenses.

Contributions: This study contributes to understanding which factors lead credit unions to adopt revenue diversification strategies, which increase their income from non-traditional activities; finding new sources of income may be important to increase an institution's general income.

Keywords: Financial Institution; Non-traditional activities; Credit operations

1. Introduction

The changes that have taken place in the Brazilian and international economic systems in recent years have impacted the way financial activities are developed. For example, Brighi and Venturelli (2016) draw attention to the deregulation of the banking sector, which resulted in an expansion in the scope of its activities and a change in revenue sources from traditional to non-traditional ones. At the same time, as financial institutions expanded, they also spread their operations across multiple geographic areas.

In addition to traditional bank lending, financial institutions can engage in non-traditional off-balance sheet activities, which may include: earnings and trading fees, banking investment and brokerage fees, net service fees, insurance commissions, net earnings on asset sales, fiduciary income, net securitization, service charges on deposit accounts, other foreign transactions, and interest-free income (Nguyen, 2012). Hence, non-traditional activities can be defined as non-interest income (Araújo, Comes & Guerra, 2011). Furthermore, since the financial sector is diversified, deregulation, technological advances, and consolidations provide a rich basis for research (Jouida & Hellara, 2018).

Studies also note that credit unions diversify by expanding products and services to keep their positions in financial markets (Esho et al., 2005), explore diversification opportunities (Goddard et al., 2008), access new income sources (Mathuva, 2016), obtain savings resulting from diversification, and promote the institutions' growth (Malikov et al., 2017). These factors motivate an interest in improving understanding of the process credit unions adopt to diversify financial products in Brazil.

The National Cooperative Credit System (SNCC) stood out due to its growth from 2016 to 2020 above the National Financial System (SFN). In this sense, the SNCC's adjusted total assets (ATA) went from R$174.3 billion in December 2016 to R$371.8 billion in December 2020, whereas its share in SFN's total assets went from 2.5% to 3.71% in the same period. At the same time, the SNCC's loan portfolio went from R$95 billion (2.74% of the SFN) to R$228.7 billion (5.1% of the SFN), resulting in an accumulated increase of 134.6% (Banco Central from Brazil, 2020a). Also noteworthy are the results of cooperatives in 2020, with a 4.6% increase in income from credit operations and an 18.4% growth in service revenues. This outstanding growth in service revenues is in line with an increase in the customer base, greater diversification of products and services, and greater dynamism of credit unions in the relationship established with their members (Banco Central do Brasil, 2020b).

Another interesting aspect of SNCC concerns the processes in which credit unions were merged, considering the main factor of a decreased number of cooperatives. Assets and operations and the cooperatives' membership are unified in a merger. Merger processes are expected to lead to efficiency gains, enabling more competently meeting the demands of associates, gains in scale, as well as an increase in the scope of products and services (Banco Central do Brasil, 2020b).

Thus, considering the importance of diversification strategies for financial institutions, including credit unions, researchers started investigating the factors that determine a diversification strategy (Ferreira & Braga, 2004; Pennathur, Subrahmanyam, & Vishwasrao, 2012; Nguyen, 2012; Cuong et al., 2020). In this sense, Nguyen (2012) emphasizes that a regulation aiming to limit banking activities may no longer be needed because having the liberty to offer varied services can help financial institutions compete more effectively. Hence, considering the previous discussion, this study's objective is to answer the following question: **what are the determinants of revenue diversification strategies among Brazilian credit unions?**

Based on the guiding question, this study's objective is to investigate the factors determining revenue diversification among Brazilian credit unions. Additionally, it seeks to identify whether there is a relationship between non-traditional revenue and revenue from credit operations. Nguyen (2012) notes that the behavior between these revenues in emerging economies is poorly understood or investigated. Pennathur et al. (2012) add that studies in this field show different impacts on the risks imposed on banks that diversify into non-traditional sources of revenue; studies are usually restricted to developed nations. Hence, the extent to which these studies' results can be generalized to countries with emerging markets is limited. It is noteworthy that such a limitation is also extended to credit unions, as these are seldom investigated. Moreover, even though credit unions are financial institutions, their characteristics differ from those of banks.

Thus, based on the previous discussion, this paper aims to contribute to the discussion concerning revenue diversification among credit unions, considering that these institutions play an essential role in the development of countries insofar as they can intermediate credit resources efficiently. Cooperatives are also seen as important agents of financial inclusion, as they can take financial products and services to regions that are not supported by banking institutions, enabling greater access to credit. Additionally, these institutions contribute to generating local income, given their commitment to associates and the location where they operate.

Additionally, this study contributes to the literature addressing credit unions by providing an empirical study on the potential determinants of product diversification. Since credit unions are special financial institutions characterized by cooperation and associativism, and are important agents for local development, they should not be neglected by studies with the potential to contribute to their development. Finally, it is relevant to understand the factors that lead credit unions to adopt revenue diversification strategies to maximize revenues from other activities besides credit operations. New sources of income might be important to increase an institution's overall income.

2. Literature review

2.1 Credit cooperatives

Credit unions can be considered financial institutions, which are constituted as cooperative societies whose objective is to provide financial services to their members. Credit unions members have access to the main services banks provide, such as deposit capture (cash or term deposits), loans and financing (credit granting), financial investments, credit cards, checks, collection services, receipts, and payments on behalf of third parties under an agreement with public and correspondent private financial institutions in the country, among others (Banco Central do Brasil, 2021; Pinheiro, 2008).

A credit union is essentially an intermediary financial institution. However, the theoretical standard of treatment of financial intermediaries and cooperative businesses cannot be directly applied to the credit unions' behavior models. There are two main characteristics of credit unions that impede this application: i) members are simultaneously owners of the organization and consumers of results or suppliers of inputs; hence, we cannot assume that members seek to maximize the profits of their transactions with a cooperative; and ii) the members supply and demand financial resources, so the cooperative intermediates between its saving members and borrowing members (Smith, Cargill & Meyer, 1981).

Credit unions enable citizens to obtain services customized to their needs, and a cooperative's positive result, known as surplus, is shared among the cooperative members proportionally to the operations they conducted with the cooperative. Thus, the gains return to the cooperative community. However, cooperative members are also subject to participate in the apportionment of potential losses, proportionally to the services they used (Banco Central do Brasil, 2021).

Thus, even though Brazilian credit unions are financial institutions. They are not called banks and are characterized as member-owned nonprofit partnerships, with their nature and legal form, not subject to bankruptcy, with the objective to provide credit and services to their members (Freitas et al., 2008). Additionally, these institutions do not fail to protect the cooperativism principles (Pinheiro, 2008), which include: free and voluntary membership; members' democratic control; members' economic participation; autonomy and independence; education, training, and information; cooperation between cooperatives and a concern for the community (International Co-operative Alliance, 2022).

As the credit union's mission statement is to serve the interests of its members, its earnings may be disbursed to its members in the form of higher interest rates for deposits, or decreased loan fees, and other fees, rather than disbursements in the form of distribution of results to its associates (Hassan et al., 2018). Therefore, the distribution of any surplus can take many forms, including distribution among members proportionally to their transactions; the development of common services to benefit all members; or the development of the credit union's business, in which the credit union democratically decides among its members the distribution mechanism to be used (Mckillop & Wilson, 2011).

Bearing in mind the uniqueness of credit unions, Bialoskorski Neto, Nagano, and Moraes (2006) mention the need for discussing the methodological development of efficient processes for monitoring cooperative societies, seeking to adapt methods and analyses to the social characteristics of these enterprises. Such a discussion is essential because cooperatives are non-profit civil societies and play an important social role, whether for their members or the community as a whole. For this reason, both an economic analysis and an analysis of social performance are relevant.

An analysis of the relevance of credit unions for Brazilian economic development shows that this sector is considered of singular importance to society as it enables the application of private resources and assumes the corresponding risks for the benefit of the community in which it develops itself. Thus, they contribute significantly to sustainable local development, especially in creating savings and financing business initiatives, which benefit the creation of jobs and income distribution (Soares & Sobrinho, 2008).

Brazilian credit unions expanded their presence in Brazil through their service units, with an increase of 392 units or 5.7% in 2020. In December 2020, credit unions were present in 2,788 Brazilian cities, which correspond to 50.1% of the total, with an increase in the number of cities served in all Brazilian regions, with emphasis on the Midwest (63.8% of the cities were reached). Thus, new service units benefit the places that no longer have bank branches; the number of cities where credit unions are the only face-to-face alternative for obtaining financial services grew to 231 (December 2020). This figure corresponds to 8.3% of the cities where they operate (Banco Central do Brasil, 2020b). Therefore, the credit cooperatives' inclusive role as financial agents is highlighted, as they provide services and products to the most distant communities, often unattended by traditional banking agents (OCB, 2019).

2.2 Financial institutions' diversification

Banking deregulation, as seen in the US market, has transformed the sector along with rapid technological advancements in information flows, communications infrastructure, and financial markets. Deregulation has fostered competition between banks, non-banking and financial institutions, and markets where none existed. In response to these competitive threats and opportunities, many banks have embraced new technologies that have changed their production and distribution strategies, resulting in considerable increases in interest-free income. In contrast, many other banks continue to use traditional banking strategies so that interest-free income remains relatively minor (DeYoung & Rice, 2004).

Thus, deregulation and technological innovation enabled financial institutions to capture an increasing share of income streams. Diversification strategies were implemented through activities and product lines, among others. Additionally, diversification of activities in financial institutions is aligned to their product line, debts, or banking business (Jouida et al., 2017).

In this context, credit unions are also highlighted, which are financial institutions organized to meet the needs of their members (Goddard et al., 2008). Credit unions are institutions that differ in the range of the financial services they provide to their members, with larger cooperatives tending to provide a more diverse menu of financial services (Malikov et al., 2017). Product diversification in credit unions is observed and investigated in different markets, such as in Australia (Esho et al., 2005), the USA (Cuong et al., 2020; Goddard et al., 2008; Malikov et al., 2017), and Kenya (Mathuva, 2016).

One way to identify diversification in financial institutions is through their sources of net operating income. For example, an institution that obtains all its income from interest income (loans) is considered concentrated. In contrast, an institution that obtains its income evenly between interest income and other non-financial income is considered diversified (Stiroh & Rumble, 2006). Studies on credit unions consider the concept of product diversification depending on different sources of income, with diversification operationalized through the participation of non-interest income in total income or by adapting the Herfindahl-Hirschman Index (HHI) for revenue (Esho et al., 2005; Goddard et al., 2008; Mathuva, 2016).

There are several reasons why focus versus diversification is essential in the context of financial institutions. First, financial institutions deal with various, often conflicting, regulations that create incentives to diversify or focus their asset portfolios, such as imposing capital requirements tied to asset risk, branch restrictions, asset investments, etc. Furthermore, the very nature of a financial intermediary's activities makes focus versus diversification an interesting economic issue to be explored, such as monitoring information from borrowers (Acharya, Hasan & Saunders, 2006).

In this sense, more diversified financial institutions can minimize their information monitoring costs, reducing total costs, as various diversification strategies can produce information that improves borrowing through activities such as underwriting of securities, brokerage, and other commercial services. Furthermore, diversification within financial institutions is believed to play an important role in providing resources and reducing the chances of costly financial difficulties (Doan et al., 2018). Hence, the fact that the financial institution works with non-traditional activities can promote banking efficiency (Araújo, Comes & Guerra, 2011).

An issue also emphasized in revenue diversification is the potential relationship between traditional and non-traditional revenue. A positive relationship between traditional and non-traditional income may indicate that the shift to non-traditional activities is beneficial for banking institutions, as it contributes to the improvement of its loan income, coupled with the fact that the freedom to offer a variety of services can also help to more effectively compete with non-bank financial institutions (Nguyen, 2012). However, this positive relationship may also indicate that interest-earning products may have associated fees. Therefore, increasing the volume or frequency of traditional activities could generate a corresponding increase in non-traditional income (Cuong et al., 2020). Thus, non-financial income would rarely occur without concomitant changes in interest income, variable inputs, fixed inputs, and the financing structure (DeYoung & Rice, 2004).

However, some argue that the relationship between traditional and non-traditional revenue can be negative. One explanation for such a relationship would be the fact that banking institutions increase their involvement in non-traditional activities to compensate for a drop in margin income (Nguyen, 2012). Additionally, there is the hypothesis that as non-financial income increases, banks may abandon traditional intermediation, which would result in decreased financial income and simultaneous drops in credit and interest rate risk (Pennathur et al., 2012). Finally, in the case of credit unions, it may happen that cooperatives are still benefiting from the growth of their traditional business, having less incentive to expand into non-traditional and less familiar activities (Cuong et al., 2020).

Thus, some argue that activities that generate non-interest income and are imperfectly associated with those that generate interest income may induce profitable growth and provide a better balance between risk and return (Doan et al., 2018). As proposed by Stiroh (2004), the reason is that a greater correlation between interest and non-interest income suggests greater cross-selling and exposes the various segments of the banking business to the same economic or financial shocks, reducing the potential for diversification benefits.

3. Methodological procedures

3.1 Study design, sample, and data collection

This is a descriptive study, i.e., based on the description and accuracy of the facts and phenomena of a given context (Triviños, 1987). Furthermore, the approach to the problem is quantitative, as it aims to collect and tabulate data for statistical tests and regression analyses. Finally, as for its procedures, this study is classified as a documentary study as documents are used as a data source.

The object of study is singular credit cooperatives belonging to the Sicoob, Sicredi, and Unicred systems, the three largest Brazilian cooperative systems. The cooperatives in these three systems were chosen due to these institutions' similar characteristics, which facilitate comparisons and analyses. According to an overview presented by the Central Bank of Brazil (2018c), in December 2018, individual credit unions from the three systems represented 64.6% of singular credit unions in the sector.

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Data concerning credit unions were obtained from the website of the Central Bank of Brazil (2018a). Thus, according to the list of credit unions under the Central Bank (Bacen) supervision, there were a total of 964 cooperatives in operation in Brazil on December 31st, 2018, two of which were confederations (Unicred and Cresol). At the end, 35 central and 927 singular credit unions were identified.

The initial population consisted of 927 singular cooperatives. The following were excluded though to adequate the sample: i) cooperatives that did not belong to the systems analyzed here; ii) cooperatives classified as capital and loan, which are those that do not capture deposits; iii) cooperatives that did not present information in any period under analysis; and iv) cooperatives that were merged during the period under analysis. In the end, we obtained a non-probabilistic sample of 482 singular credit unions, representing 52% of the population.

The analysis period comprised from June 2009 to December 2018, after Complementary Law No. 130, from April 17th, 2009, was enacted. This law was a milestone for the cooperativism sector, as it ensured greater security and regulatory stability and consolidated a diversified financial service provision (Banco Central do Brasil, 2014). The analysis ceased in 2018 to avoid potential abnormal effects resulting from the Covid-19 pandemic. An example of the effects of the pandemic on cooperatives is the considerable percentage of renegotiation of the credit portfolio to adapt credit operations' payments to borrowers' new financial conditions (Banco Central do Brasil, 2020b).

The analysis considered six-month periods because of how information regarding the credit union's financial statements was made available. The database comprised 19 semesters, from December 2009 to December 2018, with a panel composed of 9,158 observations. Note, however, that the first semester of 2009 was not included in the analysis because some variables concerned variations between periods.

3.2 Analytical model

This section presents and discusses the model adopted in this study, which was performed using the Stata® statistical package. To analyze the constraints imposed on the revenue diversification strategies adopted by Brazilian credit unions, a multiple linear regression model, estimated by the Systemic Generalized Method of Moments (System GMM) developed by Blundell and Bond (1998) was used; it is an improvement of the GMM estimator in differences.

Difference GMM and GMM system estimators are designed for panel analysis and incorporate some assumptions, such as the process can be dynamic; there may be an arbitrary distribution of individual fixed effects; there may be endogenous variables; idiosyncratic disturbances may have specific individual heteroscedasticity patterns and serial correlation; idiosyncratic disturbances are not correlated between individuals; some regressors may be predetermined, but not strictly exogenous, and the panel can be short (Roodman, 2009).

Thus, it is a robust method to solve econometric problems, with an emphasis on the problem of endogenous variables, which can be corrected using internal instruments from the data set itself (Roodman, 2009), considering that external instruments may not be available (Cameron & Trivedi, 2005). GMM System was also estimated in two stages and with the Windmeijer correction to obtain better estimates.

The following equation was estimated:

$$DIV_{it} = \beta_1 ROE_{it} + \beta_2 MARGIN + \beta_3 DESPGR_{it}$$
$$+\beta_4 RISk_{it} + \beta_5 DEP_{it} + \beta_6 \Delta LNA_{it} + u_{it} \tag{1}$$

Where i = 1, ..., N represents the cooperatives in the sample and t = 1,..., T represents the years under analysis (2009-2 to 2018-2); β is the estimated slope coefficient for each independent variable; $u_{it} = \alpha_i + \varepsilon_{it}$ is the compound error term in which a_i is the unobserved individual effect and ε_{it} is the random error term. DIV is the variable financial products diversification obtained by the participation of revenue not coming from credit operations in total operating income; ROE is the return on equity; MARGIN refers to income from credit operations on total assets; DESPGR is the ratio of operating expenses to total assets; RISK refers to the allowance for doubtful accounts on total credit operations; DEP is the natural logarithm of deposits; ΔLNA is the variation of the natural logarithm of assets.

The following tests were applied to validate the model and obtain consistent results:

1. *Unit Root Test*: is used to verify whether the instrumental variables are not correlated with the fixed effects, which is the case when the process is stationary (Blundell & Bond, 1998). Thus, the Phillips-Perron (PP) test was applied. The null hypothesis considers that all panels contain a unit root, and the alternative hypothesis considers that at least one panel is stationary. Hence, the null hypothesis is expected to be rejected.
2. *Arellano Bond Autocorrelation Test*: is used to verify autocorrelation in the idiosyncratic error term. According to Roodman (2009), a negative and significant first-order autocorrelation is expected, but not a second-order autocorrelation, that is, non-significant. Therefore, the null hypothesis assumes that there is no first- or second-order autocorrelation.
3. *Sargan/Hansen test*: is used to validate GMM and assumes that the instruments are exogenous. Given the model's over-identification, the objective is to verify the joint validity of moment conditions and identify constraints. The null hypothesis assumes that instrumental variables and residuals are not correlated. In this case, two tests can be used: the Sargan and the Hansen Tests (Roodman, 2009). Roodman (2009) also notes that the results are coincident when there is conditional homoscedasticity. However, if there is a suspicion of non-sphericity in the errors, the statistic proposed by Sargan is considered inconsistent, in which case the Hansen Test is indicated; it is considered superior, with a two-stage estimate.
4. *Hansen's Difference Test:* it verifies the validity of the subset of instruments, also known as the C statistic or C test. The null hypothesis assumes that the instruments' subsets are exogenous. When the hypothesis is not rejected, the additional conditions for using the Systemic GMM are valid (Roodman, 2009).

Finally, after applying the tests and validating the models, we analyzed the relationships among the proposed variables. As for the variables that were used in the models, their descriptions and formulas are described in section 3.3 below.

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3.3 Description of the variables

The dependent variable is represented by the percentage of income from non-traditional activities (DIV), considered a proxy for diversification and used in several studies addressing this subject (Stiroh & Rumble, 2006; Mercieca et al., 2007; Goddard, McKillop & Wilson, 2008; Lee, Yang & Chang, 2014; Pennathur et al., 2012). Thus, the higher this indicator, the more important non-traditional revenue is for the development of cooperative activities. For Goddard et al. (2008), this variable captures the effect of the direct exposure to revenue diversification, which is described in Formula 2.

$$DIV = \frac{Income\ not\ coming\ from\ \ Credit\ Operations}{Operating\ Revenue} \tag{2}$$

This variable was used as a proxy for product diversification by Stiroh and Rumble (2006), Mercieca et al. (2007), Goddard et al. (2008), Pennathur et al. (2012), and Lee et al. (2014).

Based on the literature, six independent variables considered determinants of product diversification were used. These variables are presented below.

Return on Equity (ROE): according to the literature, this is a proxy for the cooperatives' performance, presenting an endogenous relationship with diversification, which results from simultaneity between them (Goddard et al., 2008; Lee et al., 2014). Pennathur et al. (2012) showed that profitability might affect diversification among financial institutions, highlighting a positive financial relationship in India, an emerging country. In this sense, their findings suggest that better-managed financial institutions would be more likely to venture into non-traditional activities to increase their economies of scope and become more competitive (Pennathur et al., 2012). Thus, a positive relationship between ROE and diversification is expected. Return on equity is obtained according to Formula 3.

$$ROE = \frac{Surplus}{Net\ Worth} \tag{3}$$

Net Interest Margin (MARGIN): this variable is used as a proxy for traditional banking activities (credit operations), expressed as a percentage of total assets. This variable in the model seeks to capture the relationship between revenues from traditional credit and non-traditional operations. A positive relationship between them suggests that changes in the volume of traditional activities can directly lead to changes in non-traditional activities (Cuong et al., 2020). On the other hand, a negative relationship occurs when financial institutions increase their involvement in non-traditional activities to compensate for a decline in traditional activities. Note that an empirical relationship between income from credit operations and those coming from non-traditional activities tends to be weak, with the presence of endogeneity between the variables resulting from the simultaneity between them (Nguyen, 2012). Thus, a negative relationship between this variable and diversification is expected. Formula 4 shows how the net interest margin was operationalized.

$$MARGIN = \frac{Income\ from\ credit\ operations}{Total\ Assets} \tag{4}$$

General Expenses (DESPGR): according to Bressan, Braga, Bressan, and Resende Filho (2010), this variable is used to measure the costs associated with the management of the credit union's assets, indicating the degree of operational efficiency or inefficiency. Araújo, Gomes, and Guerra (2011) found that interest-free revenues are important to determine the efficiency of banks from the perspective of cost minimization. On the other hand, DeYoung and Roland (2001) point out that diversification may lead to an increase in fixed costs for commercializing other products and services. Therefore, the relationship expected for this variable is uncertain. According to Nguyen (2012), it can be used in the model according to Formula 5.

$$DESPGR = \frac{Operating\ Expenses}{Total\ Assets}$$ (5)

Credit Risk (RISK): a variable of credit risk or the quality of loans of credit unions is included to verify how such a risk affects the cooperatives' choices to diversify their products. Pennathur et al. (2012) found that domestic, private banks with poor performance and higher credit risk tend to diversify into non-traditional sources of income. In addition, it is necessary to consider the poor quality of loans, indicated by the recognition of provisions for losses. Therefore, diversification is expected to compensate for the loss of interest on granted but not paid loans (Pennathur et al., 2012; Nguyen, 2012). Thus, a positive relationship between credit risk and diversification is expected. The proxy for credit risk is operationalized according to Equation 6.

$$RISK = \frac{Provisios\ for\ doubtful\ accounts}{Credit\ Operations}$$ (6)

Deposits (DEP): this variable is used to verify the effect of the institution's debt structure on diversification (Nguyen, 2012). It is represented by the natural logarithm of the total deposits. We work with the logarithm of the deposits to minimize the amplitude of values and avoid problems in the models' estimation. DeYoung and Rice (2004) emphasize a positive relationship between deposits and income not coming from credit operations. Relationships with depositors have two possibilities: i) provide customers with fee-based services; and/or ii) allow financial institutions to exploit inelastic demand from depositors by selling these services at higher prices. Thus, a positive relationship is expected between this variable and diversification.

Business Growth (ΔLNA): this variable is represented by the variation in the natural logarithm of credit union assets. Financial institutions with high asset growth may be more interested in seeking non-traditional sources of revenue, thus diversifying operations (Pennathur et al., 2012). Thus, a positive relationship is expected between this variable and diversification.

4. Analysis of results

4.1 Descriptive analysis

Table 1 presents the descriptive data of the variables used in the proposed model.

Table 1

Descriptive Statistics of the Quantitative Variables

|	DIV	ROE	MARGIN	DESPGR	RISK	DEP	ΔLNA
No. of Observations	9.158	9.158	9.158	9.158	9.158	9.156	9.158
Minimum	0.0074	-0.6849	0.0104	0.0136	0.0016	5.3323	-0.7225
Maximum	0.8365	1.7983	0.2410	0.6300	1.1291	21.6093	1.8593
Median	0.4137	0.0657	0.0647	0.0951	0.0422	17.5280	0.0907
Mean	0.4123	0.0663	0.0678	0.1025	0.0521	17.3805	0.1002
Standard Deviation	0.1360	0.0674	0.0239	0.0412	0.0447	1.7694	0.1127
Coefficient of Variation	0.3298	1.0164	0.3532	0.4014	0.8593	0.1018	1.1252

Source: study's data

The variable Diversification (DIV) showed low variability. The coefficient of variation was 32.98%, suggesting homogeneity among the cooperatives. The median of diversification was 0.4137; more than half of the cooperatives have 41.37%, or more, of their income come from interest-free operations, that is, non-traditional activities. The highest diversification index was 0.8365, suggesting a highly diversified cooperative. On the other hand, the minimum diversification index was 0.0074, indicating low diversification. A minor variation is found when analyzing how the variable behaved on average over the period under study.

The average proportion of revenue coming from non-traditional activities (41.37%) in this sample highlights the importance of this type of revenue for credit unions in an emerging economy such as Brazil. Similarly, Nguyen (2012) emphasizes that non-traditional revenues represent approximately half of all operating revenue generated by US commercial banks and a significant amount of total revenue in many mature economies.

The variable Return on Equity (ROE) presented a coefficient of variation of 101.64%, suggesting heterogeneity in the cooperatives' performance. The median performance was 0.0657. The maximum indicator was 1.7983, and the minimum was 0.6849, indicating a negative performance. Analysis of the average behavior of the variable over the period reveals a high variability, with the worst performance verified in the second half of 2018.

As for the variable Net Interest Margin (MARGIN) obtained a coefficient of variation of 35.32%, suggesting homogeneity in the cooperatives' net interest margin. The median net interest margin was 0.0647. The maximum indicator was 0.2410, and the lowest was 0.0104. The behavior of this variable is presented in Figure 1.
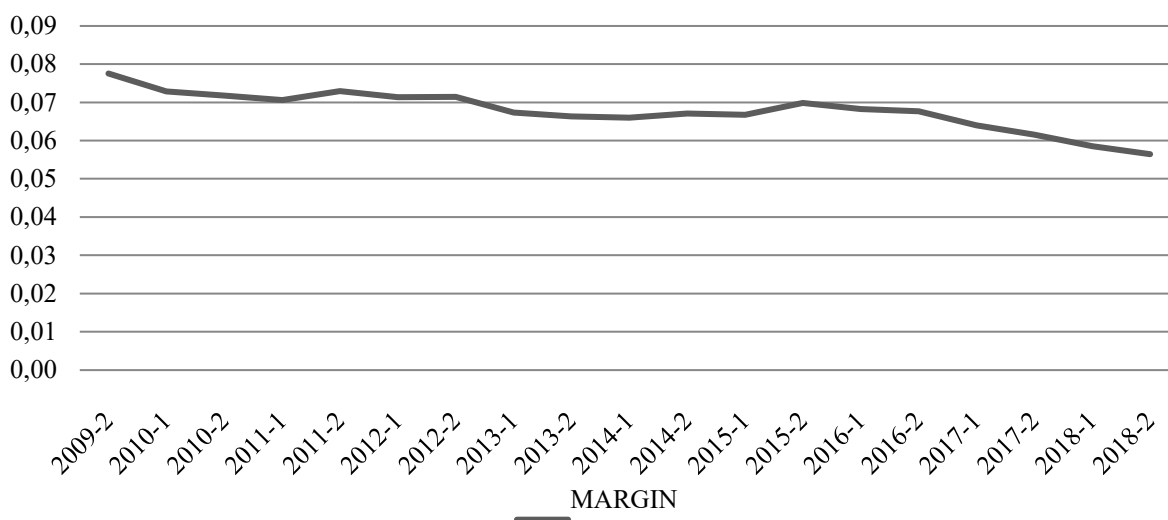
Figure 1. Behavior of the Credit Unions' Net Interest Margin

Source: study's data

Analysis of the average behavior of the net margin variable over the period shows a decline in the net interest margin from 2015-2 onwards, mainly arising from an increase in cooperative assets and lower growth of credit operations. For example, while total assets increased by around 11% from June 2018 to December 2018, revenues from credit operations increased by 6% only.

The variable General Expenses (DESPGR) portrayed a coefficient of variation of 40.14%, not presenting significant dispersion. The median of expenses was 0.0951. The maximum indicator of operating expenses was 0.6300 and the minimum was 0.0136. Analysis of how the variable behaved over the period indicated low variability. The minimum expense recorded occurred in the first half of 2018.

The variable Credit Risk (RISK) presented a coefficient of variation of 85.93%, suggesting heterogeneity in the cooperatives' credit risk. The median credit risk was 0.0422; that is, 50% of the cooperatives present a risk below 0.04. The maximum risk indicator was 1.1291; however, the minimum risk was 0.0016. As for how the variable behaved over the period, a growing trend in credit risk was verified from the second half of 2013 onwards.

However, as noted in the Banco Central do Brasil's (2018c) report, the quality of the cooperatives' credit assets is superior to those remaining in the SFN, though this difference has decreased over time given a significant growth of the SNCC's credit portfolio and a slight change in the cooperative members' profile. Therefore, the expectation is that the quality of the SNCC's credit assets will be even closer to that of the SFN. According to the report, there was an increase in problem assets in the portfolio during the crisis period (2015-2016). The cooperatives already show more stability though, after a decrease was experienced in the period of greater risk, though at a higher level than in 2013/ 2014.

The variable Deposits (DEP) exhibited a coefficient of variation of 10.18%, suggesting homogeneity in the cooperatives' debt structure. The median of the debt structure was 17.52. The maximum indicator was 21.6093, whereas the minimum reached 5.3323. The way this variable behaved over the period indicates a linear growth trend.

Finally, the Business Growth variable (ΔLNA) showed a coefficient of variation of 112.52%, suggesting heterogeneity in the cooperatives' business growth. The median growth was 0.0907. The maximum growth was 1.8593, whereas the minimum was -0.7225, indicating a decrease in assets. The variable's behavior over the period shows a sharp decline in the second half of 2012, with successive declines from 2013 onwards.

4.2 Econometric analysis

Considering the endogenous relationship between the dependent variable, represented by Diversification (DIV), and the independent variables, Return on Equity (ROE) and Net Interest Margin (MARGIN), as well as the study's longitudinal structure, we used a regression model of panel data estimated by the Generalized Systemic Moments Method (Systemic GMM) developed by Blundell and Bond (1998) to analyze the factors determining the credit unions' diversification strategies.

Before estimating GMM System, multicollinearity in the model was verified using the Variance Inflation Factor (VIF), and a Spearman correlation matrix was generated. The mean VIF was 1.67, indicating low multicollinearity between the variables. The correlation matrix is presented in Table 2.

In general, the correlations between the explanatory variables were low, except for the variable Net Interest Margin (MARGIN), which showed the highest correlation with General Expenses (DESPGR) and Deposits (DEP). However, it is noteworthy that this variable is of fundamental importance for the model. As highlighted by Nguyen (2012), the relationship between income from non-traditional activities and income from loans (credit operations) has important implications for a business strategy and the regulatory policy of financial institutions; further studies are suggested to address these implications among emerging economies. Thus, this variable remained in the econometric model.

Table 2

Matrix of Correlation

	ROE	MARGIN	DESPGR	RISK	DEP	ΔLNA
ROE	1.0000					
MARGIN	-0.1257***	1.0000				
DESPGR	-0.3191***	0.6266***	1.0000			
RISK	-0.2510***	0.1546***	0.4954***	1.0000		
DEP	0.2107***	-0.5349***	-0.2391***	0.0661***	1.0000	
ΔLNA	0.1526***	-0.0751***	-0.1161***	-0.1243***	0.0566***	1.0000

*** = significant at 1%.

Source: study's data.

The diagnostic analysis of the model, considering the two-stage GMM System, according to the unit root test, first indicated the model's suitability by showing the existence of panels with stationary series according to the Phillips–Perron (PP) test. As expected, negative and significant first-order autocorrelation and non-significant second-order autocorrelation were found in the analysis of autocorrelation of the error term. As for the instruments' exogeneity, the Hansen test was used (with more robust modulation) and, as expected, proved to be non-significant, as the test's null hypothesis is that the instruments are exogenous. Additionally, Hansen's difference tests were used, which were also not significant, confirming that the subsets of instruments are exogenous, enabling the use of the GMM System.

Therefore, given the validation tests, the effectiveness of the estimation method for the dataset was confirmed. The results of the model estimations through the two-stage GMM System are presented in Table 3.

Table 3
System GMM Estimation Results

Dependent Variable: Div	
	GMM SISTÊMICO
ROE	0.0708**
	(-0.0322)
MARGEM	-0.7383**
	(-0.3081)
DESPGR	0.2359**
	(-0.1187)
RISCO	-0.0119
	(-0.0642)
DEP	-0.0017
	(-0.0024)
ΔLNA	-0.0077
	(-0.0141)
Constant	0.4653***
	(-0.0528)
AR(1)	-17.8291***
AR(2)	-0.6725
Sargan test	433.8127**
Hanses test	373.987
Dif-Hansen test (level)	43.91
Dif-Hansen test (iv)	6.87
No. of observations	9156
No. of groups	482
No. of instruments	383

Notes: the lags of the first differences were used as instruments and in the levels of the variables ROE and MARGIN. The other regressors were assumed to be exogenous. VIF identifies whether the regressors are collinear, with a value of 1.67. The Sargan test indicates that the instruments are correlated with the residuals, while the Hansen test indicates that the instruments are not correlated with the residuals; the latter is more robust. AR(1) was significant and negative, while AR(2) was not significant. Dif-Hansen attests to the orthogonality conditions of the instrument subset. The standard errors are in parentheses; the tests present the statistic value, and the statistical significance is indicated as *10%; **5%; ***1%.

Source: developed by the authors.

The results from estimating the GMM System model indicate that the variables Return on Equity (ROE), Net Interest Margin (MARGIN), and General Expenses (DESPGR) are factors that determine diversification.

Return on Equity (ROE) was used as a proxy to capture the credit unions' performance. This variable was positive and significant at 5%; thus, it indicates that ROE is positively associated with the credit unions' diversification strategies. The findings corroborate the study by Pennathur et al. (2012), which emphasizes that financial institutions with higher administrative quality are more likely to venture into non-traditional activities to increase their economy of scope and promote their competitiveness. Thus, credit unions with higher profits tend to diversify, i.e., cooperatives with better performance could offer more products and services to their members, provide better services and keep members faithful to the institution.

The Net Interest Margin (MARGIN) was used as a proxy to capture activities with traditional credit operations. The variable was significant at 5% and had a negative sign, indicating that MARGIN is negatively associated with credit unions' diversification strategies. Thus, an increase in traditional income is associated with a decrease in non-traditional income. This finding aligns with that of Nguyen (2012) for commercial banks between 1997 and 2004, though it differs from Cuong et al. (2020) regarding American credit unions.

A potential explanation for this relationship between traditional and non-traditional incomes among credit unions is that there is no joint growth between these incomes, which would justify the negative relationship. In contrast, Cuong et al. (2020) verified that traditional cooperatives' income is associated with service fees; therefore, an increase in interest-bearing activities would also generate an increase in fee income.

Perhaps, this negative relationship indicates that non-traditional sources of income may represent business opportunities still not fully explored but with great potential to be addressed by cooperatives in the future. As suggested by Cuong et al. (2020), the reason is that cooperatives can still take advantage of the growth in their traditional activities, having less incentive to expand into non-traditional activities. Furthermore, this negative relationship can indicate potential benefits of diversification since it does not expose the business' various activities to the same shocks (Stiroh, 2004).

In this regard, Figure 2 shows the average growth rate of cooperatives' revenues from traditional and non-traditional activities. Note that, of the 18 periods analyzed here, 10 periods presented the non-traditional revenue's higher growth rate compared to traditional revenue.
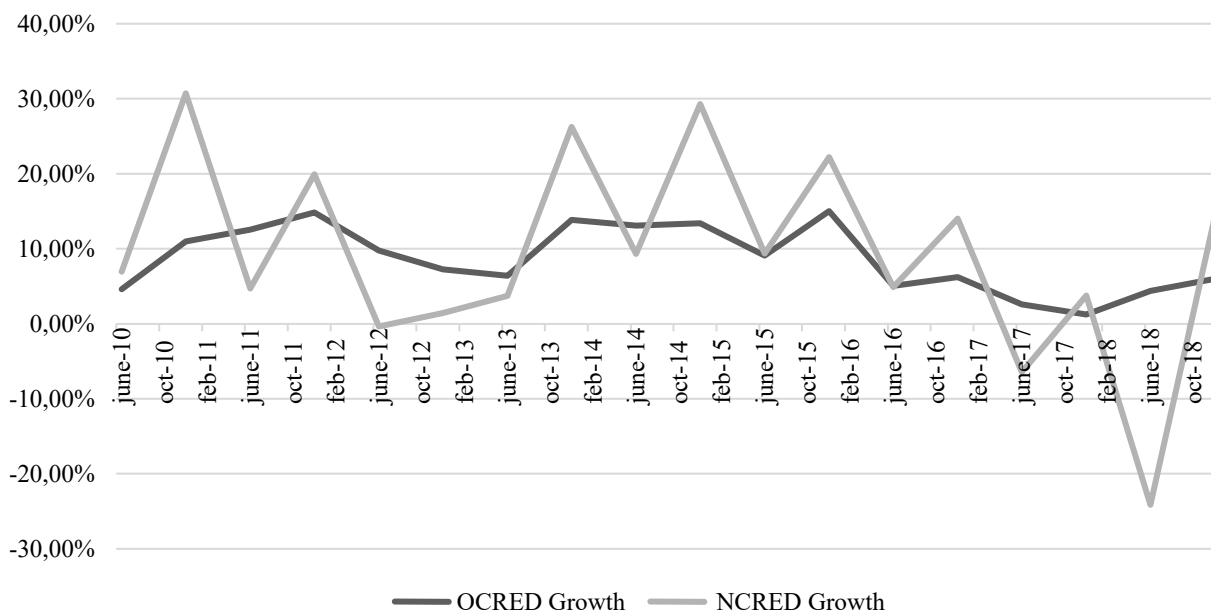
Figure 2. Growth of Income coming from Credit Operations (OCRED) and Income Not Coming from Credit Operations (NCRED)

Source: developed by the authors

As for the variable General Expenses (DESPGR), used as a proxy to capture the costs associated with managing all assets, i.e., the credit unions' efficiency or inefficiency was positive and significant at 5%. Thus, the level of DESPGR is positively associated with diversification. The literature has not reached a consensus regarding this relation, though. Araújo, Gomes, and Guerra (2011) note that interest-free (non-traditional) revenues are important instruments to determine the efficiency of banks.

On the other hand, DeYoung and Roland (2001) assert that diversification may be related to an increase in fixed costs. This is because the main input to producing more loans is variable (interest expenses), while the main input to producing fee-based products is usually fixed (employee expenses). Thus, fee-based activities require greater operating leverage than lending activities (DeYoung & Roland, 2001). In this sense, one of the consequences of increasing credit unions' income diversification may be an increase in operating expenses unions' income. Hence, expenses are a conditioning factor for diversification.

5. Final Considerations

Expansion in the scope of financial institutions' activities is notorious, as credit unions (non-profit entities) have used this strategy to increase the products and services provided to their members. Thus, diversification becomes a relevant subject of study in these institutions. In this context, this study aimed to investigate the determinants of income diversification among Brazilian credit unions, emphasizing a potential relationship between non-traditional and traditional incomes.

The results showed the relevance of non-traditional revenues for credit unions. These revenues are responsible for 41.23% of the cooperatives' total operating revenue. Therefore, similar to financial institutions in mature economies, credit unions also have an expressive proportion of income not coming from credit operations, reinforcing the importance of understanding the factors determining revenue diversification.

A regression model was estimated to meet this study's objective. The dependent variable was the proportion of non-traditional income, which is a proxy for diversification, whereas the independent variables were: return on equity, net interest margin, general expenses, credit risk, deposits, and business growth.

As a result, we found that the variables that determine diversification are: return on equity, net interest margin, and general expenses. Thus, the conclusion is that return on equity is positively associated with diversification, showing that cooperatives with higher profitability are more likely to diversify. The explanation is that more profitable cooperatives have more resources to invest in diversification, providing their members with a broader range of products.

The net margin showed a negative relationship with diversification, suggesting that revenue not coming from credit operations is driven by a decrease in traditional sources of income, i.e., by credit operations, or there is no joint growth between traditional and non-traditional revenues. Hence, a reduction in income from credit operations or the opportunity to provide new products may motivate credit unions to expand their product portfolios.

Therefore, general expenses showed a positive and significant relationship with diversification, indicating that an increase in operating expenses may occur to boost the cooperatives' diversification of activities; thus, operating expenses determine the cooperatives' diversification.

Finally, this study is expected to contribute to understanding the factors that determine credit unions' diversification, emphasizing the relationship between traditional and non-traditional activities in financial institutions operating in an emerging economy. However, this study presents some limitations: variables external to the cooperatives that possibly influence diversification were not addressed here; only one diversification measure was tested, and only the three main Brazilian cooperative systems were addressed. Thus, future studies are suggested to test other proxies for diversification and other factors that possibly impact diversification and verify whether there were changes in the cooperatives' revenue diversification process during the Covid-19 pandemic. Additionally, other risk measures can be explored, considering that it was not significant in this study. According to the literature, this is one of the main factors leading institutions to diversify their operations.

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Influence of auditors' behavior during organizational conflicts on the trust and cooperation established between internal and external auditors

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Abstract

Objective: To analyze the influence of auditors' behavior during organizational conflicts on the trust and cooperation between internal and external auditors.

Method: This descriptive and qualitative survey addressed a sample of 226 internal auditors and 267 external auditors working in Brazilian companies. Based on the factors generated by the factor analysis of the trust and cooperation elements, multiple linear regressions were performed considering the non-confrontation, solution-oriented, and control dimensions for the auditors' attitudes toward organizational conflicts.

Results show that internal and external auditors hold different perspectives on the factors guiding the decision on whether to trust and cooperate. Auditors are also influenced by age, sex, and position. As for their behavior when facing organizational conflicts, most internal and external auditors present attitudes directed toward solving conflicts. This profile positively influences trust and cooperation between internal and external auditors.

Contributions: this study indicates the importance of identifying the profile of auditors and its impact on audit processes, contributing to decision-making in the governance field, to optimize the resources invested in the auditing process.

Keywords: Internal audit; External audit; Cooperation; Trust; Organizational conflicts.

1. Introduction

Corporate governance and the Sarbanes-Oxley Act (SOX) expanded relationships between internal and external auditors. Among the main explanations for this expansion is the requirement for external auditors to issue an opinion on the existence of a comprehensive, efficient, and effective control structure, clearly documented and consistently applied to avoid material misstatements in financial statements (Gramling et al., 2004; Paino et al., 2015).

Professional standards concerning the audit function suggest that the means for internal and external auditors to achieve their respective objectives are similar. Hence, they can eliminate repetitive tasks and avoid unnecessary duplicated work (Saidin, 2014). Although internal and external auditors' primary objectives are different, common interests provide a basis for them to cooperate.

Usually, auditors face important dilemmas when performing their tasks (Morais & Franco, 2019). On the one hand, auditors intend to be thorough with their work to convey confidence. On the other hand, however, they want to decrease costs, be more efficient, avoid excesses that generate dissatisfaction in organizations and limit efficiency, in addition to minimizing risks (Morais & Franco, 2019). The literature has addressed potential solutions for these impasses, considering factors such as trust and cooperation in the relationship between internal and external auditors.

It is complex for external auditors to trust the work of internal auditors, and it does not necessarily depend on a single factor (Gray & Hunton, 2011). Studies have addressed isolated factors, however, that influence the decision of external auditors on whether to trust the work of internal auditors. These factors include criteria to assess the work of internal auditors (Haron et al., 2004), the importance of factors influencing the level of dependence of external auditors on internal auditors (Suwaidan & Qasim, 2010), trust of internal auditors (Mihret & Admassu, 2011), and dependence of external auditors on the work performed by internal auditors (Brody, 2012; Paino et al., 2015). Additionally, studies report the perceptions of internal auditors regarding their level of trust in the external audit process (Endaya, 2014; Saidin, 2014; Morais & Franco, 2019).

Quality internal audit, in terms of competence, objectivity, and team performance at work, contributes to the effectiveness of external auditing (Al-Twaijry et al., 2004). In this sense, cooperation and trust between these professionals and good communication and networking can contribute to knowledge sharing, tools, and methodologies that provide appropriate, fast, and transparent support to make timely decisions in auditing (Morais & Franco, 2019).

Both organizational and individual factors impact trust in the relationship between internal and external auditors. As for individual differences, Brody (2012) highlights that one's work style and experiences may impose barriers to communication and cooperation, impacting judgment on the level of trust in the work performed by internal and external auditors. Furthermore, behavior in the organizational context has become a critical variable in the emergence of organizational conflicts. Based on Putnam and Wilson (1982), organizational conflicts involve a strategic or planned interaction on the part of individuals, so they tend to make choices about their behavior as a result of their own goals and other individuals' goals.

Communication linked to behavior when facing conflicts is a two-way street, so it is interesting to investigate the perceptions of internal and external auditors about barriers imposed in this relationship (Brody, 2012). In addition, internally or externally, the development of the auditing role presupposes a need for studies to explore new situations and factors that possibly impact the efficiency and effectiveness of this function. Circumstances related to cooperation between internal and external auditors have not yet been extensively studied; hence, it is a gap that deserves more attention and needs to be addressed in the academic milieu.

Given the previous discussion, this study is intended to answer the following guiding question: **How does the auditors' behavior during organizational conflicts influence trust and cooperation between internal and external auditors?** To answer this question, the study analyzes the influence of auditors' behavior during organizational conflicts on trust and cooperation between internal and external auditors.

Evidence indicates that the factors promoting trust and cooperation between internal and external auditors differ (Morais & Franco, 2019). Furthermore, assuming that behavior when facing organizational conflicts can be analyzed under a non-confrontational and communicative attitude or oriented towards solution or control, we expect that the level of trust and cooperation between auditors will vary according to their attitudes. Including the role of communication in the relationship established in the auditing process enables us to look beyond the auditors' aspects or those of auditing firms. Conflict is considered inevitable and generalizable within organizational contexts (Katz & Kahn, 1978); however, most organizational researchers tend to ignore the communication factor (Putnam & Wilson, 1982).

This study differs from the remaining and contributes to an analysis of the Brazilian context, contributing to a line of research interested in analyzing factors that influence the audit function. In addition, investigations on the characteristics of auditors in the face of organizational conflicts expand analyses of the work style in the audit function (Brody, 2012) and strengthen the debate on how the analysis of behavior amidst conflicts can provide elements to favor the interaction between internal and external auditors.

Auditing is an activity that reassures its various stakeholders, giving them greater security (Adams, 1994). Thus, investigations into factors related to cooperation and trust in the relationship between internal and external auditors tend to contribute to decision-making in governance bodies, in addition to solving concerns related to the optimization of resources invested in the audit. Also, this study's objective of analyzing the reciprocal relationship between internal and external auditors allows considering different perceptions and experiences, improving this study's evidence.

This paper is divided into 5 sections: introduction, literature review and research hypothesis, methodological procedures, presentation, and analysis of results and conclusions. Section 2 presents the literature review that guided the definition of the research hypothesis. Section 3 contains the methodological aspects, involving the definition of the population and sample, the research constructs and instrument, and the procedures for data analysis. Section 4 presents the results and respective analyzes according to the research constructs. Finally, section 5 summarizes the conclusions.

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2 Literature Review and Hypothesis

2.1 Trust and cooperation between auditors

Cooperation between internal and external auditors is vital because it helps external auditors to improve the efficiency and relevance of audit reports and provides additional information needed to assess risk control practiced by internal auditors. Such a conception, related to cooperation, is transmitted to society through a set of global auditing standards that introduce, in an already complex environment, judgments that external auditors should perform regarding internal audit activities (Bame -Aldred et al., 2013). The decision on whether to trust is critical and requires professional judgment though and can be influenced by several factors (Bame-Aldred et al., 2013; Paino et al., 2015).

External auditors consider cooperating with internal auditors beneficial because it can lead to more accurate information and a more efficient auditing process (Ramasawmy & Ramen, 2012). Additionally, errors may be minimized or even eliminated (Al -Twaijry et al., 2004), while external auditing fees may decrease and influence competition in the auditing market (Felix et al., 1998; Haron et al., 2004; Abbass & Aleqab, 2013; Saidin, 2014).

As for internal auditors, Zain et al. (2006) identified that they assess their contribution to the external audit based on effective audit committees with adequate resources. Complementarily, Al-Twaijry, et al. (2004) found results that the degree of cooperation between internal and external auditors fundamentally depends on the quality of the internal audit function. Internal auditors tend to perceive the level of cooperation between internal and external audits to be limited though, while external auditors perceive such cooperation more positively (Al-Twaijry et al., 2004).

Some criteria are important to establish cooperation and trust between external and internal auditors in the auditing process. For example, the scope of the function and technical competence of internal auditors (Haron et al., 2004; Morais & Franco, 2019), the maturity that results from internal auditors' age, the number of years of the internal audit, implementation of international standards into professional practice, internal auditors' certification and experience, the quality of the work performed by the internal auditors (Sarens & Christopher, 2010; Bame-Aldred et al., 2013), and the quality of the auditing committee itself (Al-Twaijry et al., 2004; Desai et al., 2010).

External auditors tend to believe that less effort will be needed during an audit when they depend on internal auditors' work, mainly because internal auditors retain the knowledge of the company's operations, processes, and procedures (Clark et al., 1980). Additionally, the external auditors' work style influences their decisions on whether to depend on internal auditors and the extent of audit procedures (Brody, 2012). In this same context, internal auditors perceive that the trust expressed by external auditors in their work does not change fees; rather, it decreases the extent to which external auditors need to work (Saidin, 2014).

The knowledge of internal and external auditors is not necessarily in conflict. On the contrary, by working together, auditors can create important and convenient synergies (Sarens et al., 2009). In addition, cooperation provides greater security in decision-making (Morais & Franco, 2019) and greater efficiency without the process losing effectiveness (Brody, 2012). Therefore, external auditors should establish effective cooperation agreements with internal auditors and trust in their work the most as possible (Ramasawmy & Ramen, 2012) while still sharing responsibilities (Sawyer et al., 2003) and, consequently, compromising independence.

In this context, good communication is necessary for good cooperation (Brody, 2012; Paino et al., 2015), efficient environment control, and to promote greater trust in the relationship between external and internal auditors (Zain et al., 2006). Barriers in communication between external and internal auditors may compromise audit efficiency though (Paino et al., 2015) and result in adverse experiences that tend to compromise cooperation in future relationships (Brody, 2012).

2.2 Behavior during organizational conflicts and trust and cooperation in audit

To explore the effects of the external auditors' work style, perceived barriers to communication and the effect of client risk management on the dependence on internal audit work, Paino et al. (2015) identified that the external auditors' work style and communication barriers are significantly related with the dependence of external audit on internal audit. In addition, the authors identified that the role of the external auditors (manager *versus* senior) influences their judgment regarding whether to trust the internal auditors' activities.

The work style of auditors is related to how they manage conflicts or disagreements. For example, external auditors with a more passive working style generally do not argue with their clients. Instead, they often prefer to rely on the internal auditors' work without extending audit procedures. However, external auditors with a more active working style tend to dig deeper to substantiate the conflict and show high levels of skepticism. Therefore, they are more willing to work with internal auditors rather than just relying on their work (Paino et al., 2015).

Conceptually, organizational conflicts can be understood as disagreements that may lead to incompatible goals, values, or behaviors (Putnam & Wilson, 1982). In addition, Putnam and Wilson (1982) consider that conflict involves strategic or planned interactions. Therefore, individuals tend to make choices about alternative behaviors, considering their goals and other individuals' anticipated goals.

Conflict strategies refer to verbal and non-verbal communicative behaviors that enable dealing with conflicts. However, such strategies are behavioral choices people make rather than an individual's characteristic style (Putnam & Wilson, 1982). The decision to adopt a specific conflict strategy is governed mainly by situational constraints rather than personality, encompassing variables such as the nature of the conflict, organizational structure, environmental factors, and the relationship among the participants (Putnam & Wilson, 1982). The latter is responsible for involving specialization issues, and roles played in the organizational context. For Putnam and Wilson (1982), behaviors based on organizational conflicts tend to be subdivided into three approaches: (i) non-confrontation, (ii) solution-oriented, and (iii) control.

Individuals who fit the non-confrontational approach tend to choose indirect strategies to deal with a conflict, seeking to avoid or withdraw from disagreements and use communicative behaviors, such as silence, to cover up differences and hide negative feelings. The solution-oriented approach involves individuals who opt for direct communication, with behaviors that aim to find a solution, integrate the needs of both parties, and give in or compromise contradictory issues. Finally, individuals characterized by the control approach establish direct communication to discuss disagreements, persistently arguing, taking control or assuming the interaction, and defending someone's opinion (Putnam & Wilson, 1982).

Regarding how barriers previously experienced in communication and cooperation influence a potential dependence on the internal auditors' work, Brody (2012) identified that, besides client risks and internal audit quality, external auditors' trust may depend on their willingness to confront management or avoid conflict, as well as their perceptions of whether it is pleasant or unpleasant to work with internal audit teams.

The audit process involves ongoing communication between external auditors and clients, specifically internal auditors. In this sense, communication barriers can affect the quantity and quality of interaction (Brody, 2012). Thus, overcoming a conflict often depends on the conflict management method auditors choose. For example, while individuals who consider conflict harmful tend to avoid or analyze it with suspicion, in addition to encouraging consensus and repressing disagreements, others may view conflict as unpleasant though productive and constructive (Brody, 2012).

The literature argues that different individuals respond differently to the same situation according to their style of managing conflicts in the organizational context. According to Brody (2012), individuals less willing to actively engage with internal auditors may issue antecedent judgments that lead to the end, showing a greater willingness to accept the internal auditors' work and evaluate the audit function as reliable and valuable. However, individuals more willing to actively engage in other works with the internal auditors tend to make prior judgments that lead to further investigation and greater work demand.

That said, the strategies adopted by external and internal auditors in organizational conflicts are expected to change the perception of the elements behind trust and cooperation in the audit function. Hence, this study's hypothesis summarizes this expectation.

H$_1$: The auditors' behavior in organizational conflicts influences trust and cooperation between internal and external auditors.

3. Methodological Procedures

3.1 Population and sample

The study population included internal and external auditors working in Brazilian companies. To identify external auditors, the list of independent auditors from the *Cadastro Nacional de Auditores Independentes (CNAI)* [National Registry of Independent Auditors], Federal Accounting Council (CFC) was used. Within the scope of internal auditors, we considered auditors certified by the *Instituto dos Auditores Internos do Brasil (IIA Brasil)* [Institute of Internal Auditors of Brazil], in addition to those whose position reported in the LinkedIn® network is internal auditor. The study population comprised 1,619 internal auditors and 4,404 external auditors.

Considering the total number of internal and external auditors, the study sample was based on an initial search for active registrations on LinkedIn® for two months. Therefore, 1,438 internal auditors and 2,756 external auditors were contacted. The final sample consisted of the valid responses of 226 internal and 267 external auditors.

3.2 Study's constructs and instrument

The instrument applied to internal and external auditors included the constructs of trust and cooperation and organizational conflicts, in addition to questions intended to characterize the respondents. The questionnaire was structured on the Google Docs platform and made available through the link: https://docs.google.com/forms/d/e/1FAIpQLSd0GfIwXcrD77V4u7AQs-i8sqR4jdjhwTIyRKxDhacUBE1bOA/viewform

The study constructs, used to synthesize the variables, are described in Table 1.

Table 1
Study variables

Construct	Description	Questions	Scale	Reference
Sample characteristics	Age	5 questions	-	-
	Sex			
	Position			
	Experience in Auditing			
	Work in one of the Big Four*			
Trust and Cooperation	Elements considered in the decision to trust or cooperate.	21 statements	7-point Likert Scale "Not Relevant at all" – "Totally Relevant"	Morais and Franco (2019)
Organizational conflicts	Measurement of interpersonal strategies when facing organizational conflicts, subdivided into three dimensions: (i) non-confrontation, (ii) solution orientation, and (iii) control.	Non-confrontation 12 items	7-point Likert Scale "Totally disagree" – "Totally agree'	Putnam and Wilson (1982)
		Solution-oriented 11 items		
		Control 7 items		

*Concerning only the external auditors.

Issues related to the organizational conflict construct are subdivided into three dimensions, based on which one can identify the strategies employed by auditors when facing organizational conflicts. Auditors may obtain a score between 12 and 84 in the non-confrontation dimension. Next, a score between 11 and 77 may be obtained in the solution-oriented dimension, indicating a low to high solution-oriented profile. Finally, auditors may score between 7 and 49 in the control dimension, ranging from low to high profile. Table 2 summarizes the issues inherent to each dimension.

Table 2
Instrument to analyze organizational conflicts

Dimension	Statements
Non-Confrontation	I avoid topics that are a source of dispute.
	I avoid unpleasant situations.
	When I suspect a person wants to discuss a disagreement, I try to avoid it.
	I keep quiet about my opinions to avoid disagreements.
	I withdraw when someone confronts me about a controversial issue.
	I avoid disagreements when they arise.
	I keep my opinion instead of arguing.
	I try to smooth over disagreements, making them seem unimportant.
	I ease conflict by claiming our differences are trivial.
	I underestimate the importance of the disagreement.
	I reduce disagreements by saying they are insignificant.
	I make our differences seem less severe.
Solution-oriented	I harmonize my ideas with those of others to create alternatives to resolve a conflict.
	I suggest solutions that combine a variety of viewpoints.
	I compromise my ideas a little when the other person also compromises.
	I offer creative solutions when discussing disagreements.
	I suggest that we work together to create solutions to disagreements.
	I try to use everyone's ideas to generate solutions to problems.
	I offer exchanges to reach disagreement solutions.
	I tend to give in a little if the other person comes to me during the process.
	I find opposition amid our differences.
	I integrate arguments into a new solution from issues raised in a dispute.
	I will go little by little to reach an agreement.
Control	I insist that my position be accepted during a conflict.
	I emphasize my point by slamming my fist on the table.
	I raise my voice to get someone else to accept my position.
	I assert my opinion forcefully.
	My arguments dominate until the other person understands my position.
	I insistently defend my position on her.
	I stand firm in my opinions during a conflict.

Source: adapted from Putnam and Wilson (1982).

Table 2 shows that the items that compose the dimensions of the organizational conflict construct are based on aspects of the communication adopted by the auditors when facing conflicting situations.

3.3 Data analysis

Descriptive statistics were initially used in data analysis, considering the questions that characterized the sample and the organizational conflict construct. Next, exploratory factor analysis was performed for the items referring to the construct of trust and cooperation in the relationship between internal and external auditors. Using factor analysis, we sought to synthesize the relationships between a set of interrelated variables to identify common factors (Fávero et al., 2009). Hence, the 21 elements of trust and cooperation were grouped into common factors. Finally, the factors generated by the factor analysis are analyzed in terms of descriptive statistics and, later, were used as dependent variables in the main analysis.

The main analysis, which seeks to analyze whether the behavior of auditors in organizational conflicts is related to trust and cooperation between internal and external auditors, involves the operationalization of Equations 1 and 2. Initially, the trust and cooperation factors are related to the auditors' characteristics, according to Equation 1.

$$Dep = \beta_0 + \beta_1 TA + \beta_2 ID + \beta_3 SX + \beta_4 EXP + \beta_5 CA\_Senior \\ + \beta_6 CA\_Manager + \beta_7 CA\_Director + \varepsilon \tag{1}$$

Where:

Dep = corresponds to the dependent variable, alternating between the factors obtained by the factor analysis regarding the items trust and cooperation: (i) Collaboration and Work Sharing; (ii) Work Operationalization; and (iii) Expertise.

TA = corresponds to the type of auditor. It is a dummy variable in which 1 is assigned to internal auditors and 0 to external auditors.

ID = corresponds to the auditors' age.

SX = corresponds to the auditors' sex. It is a dummy variable in which 1 is assigned to Women and 0 to men.

EXP = corresponds to the auditors' experience with auditing.

CA_Senior = corresponds to auditors Senior. It is a dummy variable in which 1 is assigned to auditors Senior and 0 otherwise.

CA_Manager = corresponds to auditors Managers. It is a dummy variable in which 1 is assigned to auditors Managers and 0 otherwise.

CA_Director = corresponds to auditors Directors. It is a dummy variable in which 1 is assigned to auditors Directors and 0 otherwise.

ε = random error term.

Next, the variables concerning the three dimensions of the Organizational Conflicts construct were included: Non-Confrontation (CO_NC), Solution Orientation (CO_OS), and Control (CO_C), according to Equation 2.

$$Dep = \beta_0 + \beta_1 TA + \beta_2 CO\_NC + \beta_3 CO\_OS + \beta_4 CO\_C + \beta_5 ID + \beta_6 SX + \beta_7 EXP \\ + \beta_8 CA\_Senior + \beta_6 CA\_Manager + \beta_7 CA\_Director + \varepsilon \tag{2}$$

Where:

CO_NC = corresponds to the non-confrontation dimension when facing organizational conflicts.
CO_OS = corresponds to the solution-oriented dimension when facing organizational conflicts.
CO_C = corresponds to the control dimension when facing organizational conflicts.

All the models were operationalized using the multiple linear regression technique by the Ordinary Least Squares method.

4. Presentation and analysis of results

4.1 Sample characterization

Table 1 presents the sample's characteristics according to internal auditors (Panel A) and external auditors (Panel B).

Table 1
Sample characterization

Panel A: Internal auditors					
Experience					
Sex	1-5 years	6-10 years	11-20 years	21-30 years	+ 30 years	Total
Female	17	20	13	3	1	54
Male	64	44	45	17	2	172
Total IA	81	64	58	20	3	226

Panel B: External Auditors								
Experience								
Sex	Firma	1-5 years	6-10 years	11-20 years	21-30 years	+ 30 years	Subtotal	Total
Female	BigFour	11	11	4	1	0	27	52
	Not BigFour	5	14	3	3	0	25	
Subtotal		**16**	**25**	**7**	**4**	**0**		
Male	BigFour	19	47	26	6	5	103	215
	Not BigFour	15	21	45	19	12	112	
Subtotal		**34**	**68**	**71**	**25**	**17**		
Total EA		50	93	78	29	17		**267**

Note. IA: Internal auditors; EA: External auditors

Regarding gender, there is a predominance of male auditors, both in the context of internal and external audits. This finding is consistent with the profile of auditors, in which the profession tends to be predominantly occupied by men.

Regarding professional experience in the audit field, most respondents are at the beginning of their careers; few respondents reported an experience of more than 20 years. Furthermore, in the context of external auditing, women are clearly less experienced in the field. This finding may be explained by current changes in the profile of auditors.

Finally, the performance of external auditors in Big Four accounting firms does not tend to be a factor differentiating them from auditors working in non-Big Four firms in terms of professional experience.

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4.2 Descriptive statistics of the auditors' behavior when facing organizational conflicts

Table 2 presents the descriptive statistics regarding the behavior profile of internal and external auditors when facing organizational conflicts according to sex.

According to Table 2, both internal auditors and external auditors lean towards the solution-oriented dimension when facing organizational conflicts. In addition, it seems that the auditors' sex does not influence this tendency. Furthermore, the auditors showed a lower level of non-confrontation and control behavior when facing organizational conflicts.

In general, the mean score obtained by the internal auditors in the solution-oriented dimension was above 56 in a maximum of 77 points, which corresponds to 72.7%. Therefore, within the scope of external auditors, the mean score above 55 points characterizes them with 71.4%.

Table 2

Descriptive statistics of the auditors' behavior when facing organizational conflicts

			Mean		**SD**		**Median**		**Minimum**		**Maximum**	
Panel A: Internal auditors												
Dimensions	**Interval**		M	W	M	W	M	W	M	W	M	W
Non-Confrontation	12-84		33.6	33.5	13.8	11.0	30	33.5	12	14	84	57
Solution-oriented	11-77		57.4	56.7	9.4	8.29	58	57	12	34	77	72
Control	7-49		23.4	24.6	7.6	6.92	22.5	25	7	9	49	43
Panel B: External Auditors												
			Mean		**SD**		**Median**		**Minimum**		**Maximum**	
Dimensions	**Interval**		M	W	M	W	M	W	M	W	M	W
Non-Confrontation	12-84	Big4	35.4	32.6	16.0	9.7	32	31	12	18	84	64
		NBig4	31.3	36.7	12.1	12.2	30	35	12	20	77	62
Solution-oriented	11-77	Big4	54.2	55.0	10.6	10.5	56	57	21	27	77	69
		NBig4	53.0	55.3	9.7	7.3	53	57	15	34	74	73
Control	7-49	Big4	25.0	24.4	7.9	6.6	25	24	7	13	49	38
			23.9	22.2	7.0	7.0	24	22	7	11	42	37

Note. SD: Standard Deviation; M: Men; W: Women.

The predominance of profiles leaning toward the solution of conflicts shows that both internal and external Brazilian auditors tend to directly communicate during conflicts, expressing behaviors that facilitates finding a solution, either by reconciling the needs of both parties or reaching a compromise (Putnam & Wilson, 1982). Furthermore, in line with Paino et al. (2015), the work style of the auditors addressed here can be defined as active, as they tend to delve deeper into issues underlying conflicts to substantiate them.

These observations are confirmed by the percentages obtained: 39.2% of internal auditors and 41.6% of external auditors showed a predominance of a non-confrontational profile. Finally, in terms of control, the percentage of internal (48.9%) and external (51.0%) auditors in this profile can be considered a complement to the active profile characteristic of auditors since this dimension encompasses direct communication, with persistent argumentation and taking control or interaction (Putnam & Wilson, 1982).

4.3 Exploratory factor analysis of trust and cooperation

Table 3 presents the trust and cooperation items distribution according to factors. The answers' validity and reliability were verified to confirm the sample's adequacy. According to Hair et al. (2009), the factor loadings depend on the size of the validation sample. For a sample of over 350 respondents, values from 0.30 are considered significant to ensure statistical robustness. Normality was verified using the Bartlett sphericity test (0.000) and the Kaiser-Meyer-Olkin (KMO) value (0.93).

According to the variance explained, the factor understood as collaboration and work sharing (47.35%) appears as the most important factor for establishing trust and cooperation in the relationship between internal and external auditors. This factor aggregates items related to the audit work performance from a high interaction level between internal and external audits. More precisely, the joint action of both audits regarding the development of audit planning, work coverage map, and convergence between the techniques used can improve trust and cooperation between the groups of auditors. Additionally, it is clear that sharing information, in addition to communication, are important factors influencing the decision on whether to trust and cooperate in the audit function.

Table 3

Factor analysis of the trust and cooperation items

Extracted Factors	Items	Factor Weights			
		F1	F2	F3	h²
Factor 1 — Collaboration and Work Sharing	15. If necessary, both audits jointly adjust the audit plans.	0.857			0.760
	13. Participation in the joint development of the full coverage map of the internal and external audit work.	0.819			0.742
	14. External audit and internal audit are jointly assessed for the effectiveness and efficiency of coordination, including total costs.	0.808			0.731
	16. Sharing Risk Assessments.	0.770			0.693
	17. Joint discussion of audit, risk management, and internal controls issues.	0.749			0.697
	12. Holding joint and periodic meetings to ensure coordination and minimize duplicated efforts.	0.716			0.678
	19. Not duplicate work performed by internal audit or external audit if work is of the same nature and scope.	0.660			0.486
	18. Include recommendations proposed by internal audit or external audit in your follow-up work.	0.618			0.577
	20. Communication of discrepancies between internal audit and external audit to management.	0.576			0.477
	10. Using similar techniques, methods, and terminology between external audit and internal audit.	0.445			0.436
Factor 2 — Work Operationalization	05. Good knowledge of the audited entity (client) processes, operations, and procedures.		0.837		0.792
	09. Obtaining sufficient, appropriate and consistent audit evidence with the opinion expressed.		0.832		0.778
	06. Good knowledge of the risk management processes and internal controls of the audited entity (client).		0.814		0.790
	08. Preparing complete and consistent audit reports.		0.788		0.733
	04. Following international standards of auditing practices.		0.633		0.679
	21. Internal audit work is effectively planned.		0.631		0.534
	11. Provision of all reports and other documents to an external audit or internal audit.		0.483		0.507
Factor 3 — Expertise	02. Professional certification.			0.852	0.781
	01. Appropriate academic training.			0.688	0.625
	03. High professional experience in external audit/internal audit.			0.590	0.663
	07. Using auditing software to perform the audit.			0.586	0.520
	Total eigenvalues	**9.94**	**2.61**	**1.12**	
	% explained variance	**47.35**	**12.43**	**5.34**	

The items related to the operationalization of the audit work were grouped in factor 2, with an explained variance of 12.43%. In this factor, trust and cooperation between internal and external auditors tend to depend on a good level of knowledge about auditing processes and standards, in addition to providing and obtaining adequate and sufficient evidence and preparing complete and consistent reports.

Finally, items related to the auditors' expertise, such as obtaining professional certifications, training, technological improvement in the audit process, and experience, showed an explained variance of 5.34%. Thus, aspects of the auditors' level of competence tend to impact trust and cooperation between internal and external auditing; however, it is not the factor with the highest explanatory power.

Some of these findings are consistent with those reported by Morais and Franco (2019). The competence of Portuguese auditors was also interpreted as the factor with the least explanatory power regarding the decision to trust and cooperate. Such evidence contradicts previous studies (Haron et al., 2004; Al-Twaijry et al., 2004; Mihret & Admassu, 2011) that support that competence and experience are factors associated with trust between internal and external auditors.

As opposed to Morais and Franco (2019), Brazilian auditors tended to decide about trust and cooperation mainly based on elements related to the interaction between internal and external audits (Factor 1). In turn, the auditors in the Portuguese context perceive the items concerning work operationalization as more important to influence trust and cooperation in audit processes.

Next, a statistical analysis is performed to address the factors identified in the factor analysis according to sex and the accounting firms' structure (the latter, for external auditors only). Table 4 presents a summary of the results.

Table 4

Descriptive statistics of the trust and cooperation factors

Panel A: Internal auditors											
Factors		**Mean**		**SD**		**Median**		**Minimum**		**Maximum**	
	Intevarl	M	W	M	W	M	W	M	W	M	W
Factor 1	10-70	57.0	59.8	12.5	9.9	60	63	10	35	70	70
Factor 2	7-49	39.6	39.9	4.0	2.7	41	41	7	31	42	42
Factor 3	4-28	23.9	23.6	4.0	3.7	25	24	6	9	28	28

Panel B: External auditors												
Factors			**Mean**		**SD**		**Median**		**Minimum**		**Maximum**	
	Intevarl		M	W	M	W	M	W	M	W	M	W
Factor 1	10-70	Big4	52.5	50.5	13.7	13.3	57	55	19	24	70	70
		NBig4	53.3	54.0	12.3	9.6	55	54	12	37	70	70
Factor 2	7-49	Big4	36.0	37.4	6.9	5.9	37	39	6	18	42	42
		NBig4	36.9	39.9	6.3	2.2	39	41	6	34	42	42
Factor 3	4-28	Big4	21.3	23.7	5.3	4.3	22	25	6	9	28	28
		NBig4	23.1	24.2	4.6	4.1	24	26	6	14	28	28

Note. SD: Standard Deviation; M: Men; W: Women. Factor 1: Collaboration and Work Sharing; Factor 2: Work Operationalization; Factor 3: Expertise.

Even though the mean values of each factor are similar for both internal and external auditors, the minimum values characteristic of women working in internal and external auditing for the three factors stand out. Women generally rate aspects related to trust and cooperation from the second point on the 7-point Likert scale ranging from "Not at all relevant to Totally relevant". This finding suggests that women consider that no element is "not relevant at all" to determine whether to establish trust and cooperation between internal and external auditors.

Furthermore, the performance of external auditors working in one of the Big Four firms cannot be interpreted as a condition that distinctly impacts the level of trust and cooperation between auditors.

4.4 Analysis of the relationships

Table 5 presents the analysis of the relationship between the trust and cooperation factors and the auditors' characteristics, such as type (internal or external), age, gender, experience, and position.

Table 5

Results of the relationship between the auditor's characteristics and the trust and cooperation factors

	Collaboration and Work Sharing	Work Operationalization	Expertise
	Coefficient (Est. t)	Coefficient (Est. t)	Coefficient (Est. t)
Type of Auditor (IA/EA)	**5.104*** (4.10)**	**2.692*** (5.71)**	**1.237*** (2.79)**
Age	0.043 (0.46)	0.021 (0.49)	**0.066** (2.10)**
Sex	1.207 (0.96)	**1.382*** (2.89)**	**0.937** (2.02)**
Experience	0.072 (0.63)	0.011 (0.25)	-0.021 (-0.56)
Position_Senior	-1.330 (-0.63)	-0.996 (-1.31)	-0.862 (-1.14)
Position_Manager	-1.309 (-0.61)	**-1.937** (-2.42)**	-1.214 (-1.58)
Position_Director	-0.723 (-0.28)	-0.636 (-0.75)	-0.201 (-0.24)
R^2	0.045	0.087	0.047
Mean VIF	2.87	2.87	2.87
Durbin Watson	1.94	1.98	1.99
Model's significance	0.000	0.000	0.003
No. of Observations	493	493	493

* Significance at 0.10; ** 0.05; *** 0.01.
Note. IA: Internal auditor; EA: external auditor; VIF: Variance Inflation Factor.

The results reveal that the type of auditor (dummy variable, where 1 represents internal auditors and 0 external auditors) in the general sample is positively and significantly associated at 1% with collaboration and work sharing, work operationalization, and expertise. In this sense, internal auditors, more than external auditors, indicate that collaboration and work sharing, work operationalization, and expertise can improve trust and cooperation between internal and external audits.

According to Morais and Franco (2019), a greater perception of internal auditors regarding the trust and cooperation factors may be related to their understanding of organizational processes and standards, believing in the benefits of cooperation and its contribution to completing the external audit process (Ramasawmy & Ramen, 2012).

Regarding the auditors' characteristics, gender tends to impact the relationship of trust and cooperation, especially concerning work operationalization, in which a significant relationship was verified at the 1% level, as well as expertise at 5%. These findings enable us to infer that women distinctively assess the elements regarding trust and cooperation between internal and external auditors.

Furthermore, cooperation and trust based on the auditors' level of expertise may be related to their age. As a result, older auditors may interpret the importance of elements related to experience, training, and certifications differently when deciding whether to trust and cooperate. Finally, a negative and significant relationship at the 5% level was identified between the performance of auditors in management positions and trust and cooperation in relation to the work operationalization factor. This result is somewhat consistent with the evidence provided by Paino et al. (2015) that the role of external auditors influences one's judgment on whether to internal auditors' activities.

The non-significant results between the auditors' professional experience and the trust and cooperation factors contradict some previous studies (Desai et al., 2010; Sarens & Christopher, 2010) but corroborate the evidence obtained by Morais and Franco (2019) in Portugal.

Next, the dimensions related to the behavior of auditors when facing organizational conflicts were included (according to Equation 2) to verify whether the predominance of certain attitudes can change the level of trust and cooperation between internal and external auditors. Table 6 presents the results.

Table 6

Results concerning the relationship between organizational conflicts and trust and cooperation

	Collaboration and Work Sharing	Work Operationalization	Expertise
	Coefficient (Est. *t*)	Coefficient (Est. *t*)	Coefficient (Est. *t*)
Type of Auditor (IA/EA)	4.327*** (3.60)	1.885*** (4.22)	0.776* (1.79)
CO_Dimension1	0.034 (0.76)	**-0.093*** (-3.99)**	**-0.032** (-1.97)**
CO_ Dimension2	**0.433*** (5.95)**	**0.272*** (6.02)**	**0.179*** (6.01)**
CO_ Dimension3	**0.170** (2.09)**	0.000 (0.03)	0.017 (0.64)
Age	-0.008 (-0.10)	0.007 (0.20)	0.053* (1.81)
Sex	0.992 (0.79)	1.231*** (2.82)	0.841* (1.92)
Experience	0.051 (0.48)	-0.025 (-0.57)	-0.040 (-1.14)
Position_Senior	-1.594 (-0.80)	-0.950 (-1.30)	-0.870 (-1.22)
Position _Manager	-1.309 (-0.66)	-1.747** (-2.36)	-1.128 (-1.57)
Position _Director	1.277 (0.51)	0.045 (0.06)	0.405 (0.48)
R^2	0.188	0.293	0.178
Mean VIF	2.42	2.42	2.42
Durbin Watson	1.91	1.97	1.92
Model's significance	0.000	0.000	0.000
No. of observations	493	493	493

* significance at 0.10; ** 0.05; *** 0.01.
Note. IA: internal auditor; EA: external auditor; CO_Dimension1: Non-confrontation dimension of the Organizational Conflicts construct; CO_Dimension2: Solution-oriented dimension of the Organizational Conflicts construct; CO_ Dimension3: Control dimension of the Organizational Conflicts construct; VIF: Variance Inflation Factor.

Table 6 highlights the values related to R^2 found in the models after the inclusion of variables related to the behavior of auditors facing organizational conflicts. The inclusion of these variables allows us to infer that the behavior of auditors presents greater explanatory power on the elements considered important for trust and cooperation between internal and external auditors compared to the auditors' characteristics.

The first model shows a positive and significant relationship at 1% and 5% with the solution-oriented (CO_Dimension2) and control (CO_Dimension3) dimensions, respectively. Furthermore, the involvement of auditors in organizational conflicts, expressing attitudes that indicate a tendency towards solution-oriented and control tends to improve trust and cooperation based on collaboration and work sharing.

Regarding the second and third models, a negative and significant relationship is found between the non-confrontation dimension (CO_Dimension1) and the trust and cooperation factors related to work operationalization and expertise. These results show that auditors with a profile oriented towards non-confrontation tend to decrease the level of interaction between internal and external auditors.

Conversely, the positive and significant relationship between the variables indicates that auditors with profiles oriented towards conflict resolution (CO_Dimension2) manage to improve the level of trust and cooperation in the work operationalization and expertise factors.

That said, this study's hypothesis H_1 failed to be rejected, considering that the behavior of auditors in organizational conflicts influences trust and cooperation between internal and external auditors.

5. Conclusions

This study analyzed the influence of auditors' behavior in situations of organizational conflicts on the level of trust and cooperation between internal and external auditors. A questionnaire was sent, via the LinkedIn® network, to internal and external auditors working in Brazil to identify the important factors influencing trust and cooperation in the audit process and the behavior of auditors when facing organizational conflicts. The responses of 226 internal auditors and 267 external auditors, collected between March and April 2020, were considered valid.

The results presented three factors that are common to internal and external auditors regarding trust and cooperation: (i) collaboration and work sharing, (ii) work operationalization, and (iii) expertise. Collaboration and work sharing proved to be the most relevant factor for establishing trust and cooperation between auditors. Thus, there is a high level of interaction between Brazilian internal and external auditors, with good communication between the parties, and the ability to express differences and gather efforts to devise plans and audit processes, which are the main characteristics guiding the decision on whether to trust and cooperate.

As for the differences concerning the auditors' area of activity, this study supports that internal auditors perceive collaboration, work sharing, work operationalization, and expertise as factors that contribute to establishing a relationship of trust and cooperation between the parties. Furthermore, the auditors' characteristics, such as gender, age, and position, may be aspects that influence auditors to trust and cooperate during audit processes.

The profile of auditors when facing organizational conflicts directed towards a search for solutions can improve the level of trust and cooperation between internal and external auditors. Thus, the ability to resolve conflicts, whether by reconciling positions or reconsidering previously established opinions, are characteristics that impact the audit process.

In addition, the position of auditors regarding avoiding situations that generate conflicts and choosing not to express opinions about divergences may decrease the level of trust and cooperation pertinent to work operationalization and expertise. Thus, non-confrontational behaviors or behaviors not aimed at conflict resolution may not promote trust and cooperation between internal and external auditors.

This study's evidence is relevant for regulatory bodies, accounting firms, and audit committees due to the importance of observing the profile of auditors when facing conflicts. Additionally, the results can contribute to building collaborative audit teams, both internally and externally, which can positively impact audit quality.

The implications for the scientific field concern a greater understanding of the factors influencing the level of cooperation and trust in the relationship between internal and external auditors, especially among Brazilian auditors. Additionally, it advances the analyses related to audit efficiency and quality, looking at the impact of behavioral factors, such as the profile of auditors when facing organizational conflicts.

Future studies may address trust and cooperation from the perspective of non-auditors, such as directors or managers who use the information provided in audit functions. Hence, further research addressing the profile of auditors when facing organizational conflicts is suggested to relate the profile of auditors to the efficiency and quality of the audit process itself.

Finally, caution is needed regarding the generalization of this study's results. First, the possibility that one's attitude towards organizational conflicts, as reported by the internal auditors, is influenced by their employment contract is highlighted. Thus, the findings regarding the internal auditors' perceptions may result from factors intrinsic to the companies' internal processes or even to the senior management's needs and objectives. Furthermore, the option to analyze organizational conflicts regarding communication criteria (Putnam & Wilson, 1982) restricts the interpretation of results, not allowing a more specific analysis, such as relating them to the behavior of auditors when making accounting decisions.

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Money burns a hole in your pocket: a case of financial education

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Abstract

Purpose and method: This teaching case portrays a family's adverse financial situation, a time when the breadwinner is about to retire. Even with an excellent monthly income, this individual never thought about the future and used all resources to meet immediate needs, not generating extra income to complement his retirement income. This fictional case is described using a playful narrative and dialogues based on the authors' experiences, depicting real-world objectives and situations. Hence, it instigates and promotes a reflection on the importance of financial education with all the aspects that involve earning income, saving, spending consciously, investments, and, finally, aiming for a sustainable retirement.

Outcomes and contributions: This paper highlights financial education and its importance in ensuring one's economically viable (and sustainable) future. The income, expenditure, and investment tripod is expected to become a virtuous circle. This teaching case is suggested for courses addressing finances, budgeting and financial management, and others related to personal finance and even transversal teaching.

Keywords: financial education, personal finance, investments, teaching case.