08, 09, 10 e 11 de novembro de 2022
ISSN 2177-3866

Income Smoothing and Cooperative Governance Practices in Singular Brazilian Credit Unions

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Agradecimento à orgão de fomento:
This research was supported by the Fundação de Amparo à Ciência e Tecnologia de Pernambuco (FACEPE), CAPES, CNPq and UFPE.

INCOME SMOOTHING AND COOPERATIVE GOVERNANCE PRACTICES IN SINGULAR BRAZILIAN CREDIT UNIONS

1 INTRODUCTION

The natural growth of institutions entails the need to hire management specialists, in order to maintain the organization's progress, where agents are hired to act in accordance with the interests of the business owners, however, nothing prevents their performance from targeting their own interests (Fontes Filho, 2008).

In this context, the agency theory, proposed by Jensen and Meckling (1976), states that the agent (manager) can act guided by his own interests in decision making. Therefore, a contract between the parties is signed in order to reduce conflicts and reconcile interests, providing for certain situations caused by the privileged position of the agent in accessing information.

Therefore, in Credit Union (CU), which are voluntary membership institutions managed and owned by their members with the objective of providing financial services, without the objective of profit (Brasil, 1971) and included in the National Financial System (NFS) by the Complementary Law (CL) nº 130/2009 and supervised by the Central Bank of Brazil (CBB), agency conflicts occur in a peculiar way, when compared to other institutions, given the dual role of the cooperative member that allows him to occupy management positions in the company, in addition to the possibility of being a saver and a borrower simultaneously, creating an environment conducive to the emergence of conflicts of interest (Lima, Araújo & Amaral, 2008).

In this way, cooperative members who hold management positions are susceptible to agency conflicts due to the natural distance between management and cooperative members (Canassa & Costa, 2018). Furthermore, in the case of savers and borrowers, the conflict lies in the interest in more favorable rates of return and borrowing according to the situation in which they find themselves (Westrup, Camilo & Estevam, 2018).

Therefore, to manage the problems arising from agency conflicts, the adoption of governance mechanisms is of great importance (Hedlund *et al.*, 2021). In this sense, CBB, by virtue of resolution nº. 4434/2015, made compliance with certain standards in the CU mandatory (CBB, 2015). In parallel, in the same year, the Brazilian Institute of Corporate Governance (BICG) created a manual of good governance practices, which can be adopted by all companies, including CU, helping them in the process of adapting to the new criteria (BICG, 2015).

In addition, CU suffer greater pressure regarding aspects of the transparency of their results (Mathuva, Mboya & Mcfie, 2017), since the variation in results can denote management inefficiency to the cooperative member, as well as demonstrate that the institution is at risk (Maia, Bressan, Lamounier & Braga, 2013). In this way, these institutions can manage their results through income smoothing, in order to keep them stable at a certain level.

From this perspective, Bressan, Souza & Bressan (2017) report that income smoothing is a form of earnings management that seeks to report stable profits, making it possible to maintain the distribution of surplus to cooperative members, since this resource can be seen as a indicative of solidity, which improves the image of the cooperative's financial situation with its members and investors, generating a climate of trust.

In this sense, the literature addresses income smoothing in different organizations (Kustono, Roziq & Nanggala, 2020; Skala, 2021; Santos, Santos & Santos, 2020), but how corporate governance influences this phenomenon is a little explored topic (Carvalho, De Luca & Cardoso, 2018; Yanti & Dwirandra, 2019), especially in CU.

It is important to highlight that the brazilian CU reach a large number of people, accumulating almost 12 million members, reaching the equivalent of 4.9% of the country's population, and an expressive participation in the NFS, having presented an increase of 35.8% in the sector's total assets compared to a 25.5% growth in the SFN (CBB, 2021). Therefore, the study of these institutions is very important not only to improve the financial security of the cooperative members, but also to strengthen the NFS.

In this sense, governance measures promote more transparency, helping the relationship between cooperative members and management, in addition to ensuring the integrity of financial reports (Thesing *et al*., 2020). In this context, the following question is elaborated: **What is the influence between cooperative governance and income smoothing in individual Brazilian credit unions?** In order to answer the proposed question, the sample of CU that belongs to the S_4 level segmentation in the year 2020 was used. As a methodology, in order to verify the influence of cooperative governance on income smoothing, was used the Weighted Least Squares (WLA) model with corrected heteroscedasticity, considering the base model used by Maia *et al.* (2013), who used discretionary accruals as a dependent variable to test income smoothing. In addition, the cooperative governance proxy was measured through a binary questionnaire with 17 questions, where it is possible to calculate a cooperative governance index (IGCoop).

Thus, the article is composed of five topics, namely: Introduction; Theoretical Reference; methodology; results; and final considerations.

2 THEORETICAL REFERENCE

2.1 Cooperative Governance and Earnings Management in Credit Unions

In Brazil, the history of CU dates back to 1902, when the current Sicredi Pioneira Rio Grande do Sul (RS) was founded, becoming the first credit union in Latin America in Nova Petrópolis/RS (Thesing *et al.*, 2020). Since then, the country has gone through several regulatory processes, such as the reformulation of the FNS with Law 4.595/64, including the creation of CBB as the national financial authority (Brasil, 1964).

Therefore, the time frame for these institutions was given by the enactment of law nº 5764/1971, which governs the National Policy on Cooperativism, which, among other definitions, deals with the legal regime of these institutions, in addition to classifying them as Singular, Central and Federations or Confederations (Brazil, 1971).

In addition, through CL nº 130/2009, these corporations were included in the NFS, under the supervision of CBB. Thus, as the members of the cooperative's board of directors must be members elected by suffrage, an environment conducive to the creation of conflicts of interest is created, characterized by the absence of a clear separation between the roles of owner and manager, at the same time that make use of the company's services (Westrup, Camilo & Estevam, 2018). Therefore, the CUs have agency problems that are not observed in other institutions, which requires specific governance mechanisms for these institutions, being a fertile field for studies on the subject.

In this sense, in order to collaborate with the continuity of these organizations, in 2009 the CBB created the Cooperative Governance project, seeking to encourage the adoption of good governance practices in these institutions, since these organizations are susceptible to agency conflicts, which is better explained by the agency theory (Ventura, Fontes Filho & Soares, 2009). Subsequently, between 2013 and 2014, CBB continued the project and carried out the Research Governance in Credit Unions 2013/2014, the results of which culminated in the decision that made it mandatory to observe certain governance standards in these organizations, Resolution nº 4.434/2015 (CBB, 2014;2015).

It is interesting to mention that CU can be adjusted in three degrees or modalities: singular, central and confederations. Single CUs are classified as full, classic and loan capital (Brasil, 1971; CBB, 2015). In addition, through Resolution No. 4,553/2017, CBB classified financial institutions according to their size in segmentations, where singular CUs are included in levels S_4 and S_5 (CBB, 2017).

In addition, in the case of cooperatives, the Organization of Brazilian Cooperatives (OBC) also emphasizes the importance of adopting good governance practices in these institutions, as it contributes to the proper functioning of these companies, reducing risks, improving performance and improving trust. of cooperative members and investors in management (OBC, 2016).

In this way, the management structure in CU has the following structure: general meeting, boards of directors, advisory and fiscal, in addition to independent bodies, such as committees and boards (OBC, 2016; Silva, Santos, Santos & Ranciaro Neto, 2022).

However, the three bodies that the legislation imposes on the structure of cooperatives are the General Meeting (GM), the supreme body composed of all cooperative members, who exercise their right to vote in decision-making, where all votes have the same weight; the Board of Directors (BD), which is made up of representatives elected at the GM and has the role of defining the course of the CU and members of the executive board (EB); and the Fiscal Council (FC), which is independent from the BD, reporting directly to the GM, and responsible for overseeing the actions of managers and the company's accounts (Brasil, 1971; CBB, 2015).

In this sense, the adoption of governance mechanisms are of paramount importance in the management of agency conflict, in addition to being an essential tool to improve the transparency of financial reports (Thesing *et al.*, 2020), which may possibly interfere with earnings management in the income smoothing modality in CU.

From this point of view, income smoothing is a form of earnings management that seeks to keep the institution's profits at a certain level, avoiding large variations. Therefore, such mechanisms can be used by different types of organizations that seek to maintain a consistent disclosure of their results (Martinez, 2001).

It is interesting to mention that sometimes this process can be seen as a way to hide the true reality of the institution (Kolozsvari & Macedo, 2016). Thus, the income smoothing practice is used by managers in periods where it is necessary to keep the disclosure of earnings with figures similar to previous periods, preventing investors from seeing the business as risky, which has a direct influence on the trading price of the shares. and the consequent satisfaction of the corporate structure (Carvalho, De Luca & Cardoso, 2018).

Thus, in CU, earnings management can be done in order to avoid demonstrating a risk situation for its members with the discretion of certain accounts, as this can remove a view of inefficiency in the institution's management (Maia *et al.*, 2013). As trust is one of the pillars of cooperativism and the format of cooperatives makes the participation of members essential for their growth (OBC, 2016), the dissemination of stable results can be fundamental for the permanence of cooperative members in the institution.

Another important point is that the supervision of CU accounts is carried out by CBB and by the central cooperatives, which can also be a factor that leads to the adoption of income smoothing (Bressan, Souza & Bressan, 2017). Another motivation mentioned in the literature is related to the adequacy of minimum capital, which is provided for in the Basel agreement and regulated by the CBB, and is also a reason for CU to manage their results (Maia *et al*., 2013).

It is interesting to mention that leftovers tend to be seen as synonymous of solidity and maintaining the distribution to cooperative members is of paramount importance for the trust of these members in management, which can generate a preference for managing results through net expenses with credit operations (Bressan, Bressan & Silva Junior, 2016).

In this way, earnings management through provisions for doubtful accounts (PDA) does not characterize accounting fraud, provided that the minimum percentages of provision established in the legislation by CBB are complied with. Therefore, the percentages are defined according to the risk level of the operation performed, ranging from 0% for AA risk operations to 100% for level H operations (CBB, 1999). In view of the above, the following research hypothesis is proposed:

H1: Cooperative governance negatively influences earnings management.

2.3 Empirical Studies about Cooperative Governance and Outcome Smoothing

The literature indicates the study of income smoothing in different types of organizations. Therefore, in CU, the study by Maia *et al.*, (2013) investigated the practice of earnings management in CU in Brazil. Among its results, the author found that the CUs studied do not manage their results with the purpose of adapting to regulatory capital. Also, the results showed the occurrence of income smoothing and earnings management to avoid reporting losses by the institutions studied.

Subsequently, Bressan, Bressan and Silva Júnior (2016), with a sample of 149 CUs affiliated to the Cooperative Credit System (SICREDI) between the periods of 2001 to 2011, using the Multiple Linear Regression Model, showed that the sample studied use the net expenses with provisions for loan operations in order to smooth their results, where a trend of increasing practice was observed with the increase in the result before the aforementioned provisions.

Bressan, Souza and Bressan (2017) also found a result that reinforces the aforementioned study. The authors used a sample of 113 cooperatives affiliated to Unicred with data from the period 2001 to 2011 with Classic Linear Regression Model with Panel Data, finding a tendency to maximize provisions in the case of higher non-discretionary results, showing that they seek for management to reduce variance in results.

In publicly traded companies, Carvalho, De Luca & Cardoso (2018) seeks to analyze the relationship between income smoothing and the fiscal council. Thus, with a sample of 78 Brazilian non-financial publicly traded companies with data from 2014 to 2016 and the use of linear regression data analysis, it was concluded that the more structured the fiscal council, the more difficult it is to find the income smoothing practice.

Concerning governance in CU, Westrup, Camilo and Estevam (2018) analyze how the dominance of savers or borrowers of resources influences the performance of CU. Through a regression with balanced panel data, using 39 cooperatives affiliated to SICREDI in the period from 2008 to 2014, the authors find that the dominance index, the age of the cooperatives and the default have a significant influence on the ROA. Furthermore, the authors emphasize that principal-principal conflicts are managed by adapting the principles of cooperative governance.

In addition, Santos and Santos (2020) sought to verify the relationship between performance and risk in CC that make use of smoothing and those that do not. Thus, with a sample of 626 cooperatives with data from 2000 to 2019, they found a negative relationship between leftovers and operating income and the practice of income smoothing and a positive relationship between the other significant variables studied, such as allowance for loan losses and administrative expenses.

In banks, Skala (2021) presents in his work, with a sample of 211 banks from European Union member countries and data from 2003 to 2014, a search in order to identify the presence of income smoothing in this segment. The results indicate that part of the banks studied used income smoothing through discretion in loan loss provisions in order to create financial reserves for future crises.

3 METHODOLOGY

This research has a quantitative approach, since it uses mathematical or statistical methods (Coelho, 2016). As for the means, it is characterized as documentary and bibliographical, which are the surveys of theoretical references analyzed and published in written and electronic media, such as books, scientific articles and on websites (Fatinato, 2015). As for the purposes, it is classified as a descriptive research, as it describes the characteristics of a population, an experience or an event (Raupp & Bauren 2004).

The population of this research is part of the Brazilian CU authorized to operate by CBB. The sample is composed of the CU members of the S_4 segmentation in the year 2020, which had their information available in the collection period of this work, totaling 92 CU. The operationalization of these variables are described in Table 1 below

Table 1

Proposed Variables and Expected Relationships

Variables		Operationalization	Expected Ratio	Expected Signal
		Dependent Variable		
$VDLoc$	Change in net expenses with PDA	[(Cosif 8.1.8.30.30-9 $_t$) + (Cosif 7.1.9.90.30-7 $_t$)] / (Cosif 1.6.0.00.00-1 $_{t-1}$)	Not applicable	Not applicable
		Independent variables		
VOC	Variation in volume of credit operations	[(Cosif 1.6.0.00.00-1$_t$) – (Cosif 1.6.0.00.00-1$_{t-1}$)] / (Cosif 1.6.0.00.00-1$_{t-1}$)	Positive	+
$RnDoc$	Non-discretionary result of credit operations	[((Cosif 7.0.0.00.00-9) – (Cosif 8.0.0.00.00-6)) + ((Cosif 8.1.8.30.30-9) + (Cosif 7.1.9.90.30-7))] / (Cosif 1.6.0.00.00-1$_t$)	Positive	+
		Control Variables		
$OpVenc$	Overdue operations	(Overdue operations/Total Classified Portfolio)	Negative	-
$Spread$	Difference between loan rates ($GerOR$) and borrowing ($CustoCap$)	$Spread = GerOR - CustoCap$, in that: $GerOR$= (Cosif 7.1.0.00.00-8 $_t$ / Cosif 1.6.0.00.00-1 $_t$); and $CustoCap$ = [(Cosif 8.1.0.00.00-5 - ((Cosif 8.1.8.30.30-9) + (Cosif 7.1.9.90.30-7))/ (Cosif 1.6.0.00.00-1$_t$)	Positive	+
Desemp	*proxy* net worth adjusted (CPLA)	[net worth (Cosif 6000000-2$_t$) / (Cosif 6000000-2$_{t-1}$)]	Negative	-
Classif	Classificação	Dichotomous variable, assigning 1 for cooperatives classified as Full and 0 (zero) for cooperatives classified as classic	Positive	+
Cooperative Governance	$IGCoop$	*proxy* of Cooperative Governance, sum of the questionnaire	Negative	-

Note. Subtitle: PDA: Provisions for doubtful accountsa; Cosif 8.1.8.30.30-9: Expenses with Provisions for Credit Operations; Cosif 7.1.9.90.30-7: Reversal of Provisions for Doubtful Credit Operations; Cosif 1.6.0.00.00-1; Overdue Operations: Level B Risk Operations (Cosif 3.1.3.00.00-9) + Operações de Risco Nível C (Cosif 3.1.4.00.00-2) + Level D Risk Operations (Cosif 3.1.5.00.00-5) + Level E Risk Operations (Cosif 3.1.6.00.00-8) + Level F Risk Operations (Cosif 3.1.7.00.00-1) + Level G Risk Operations (Cosif 3.1.8.00.00-4) + Level H Risk Operations (Cosif 3.1.9.00.00-7); Total Classified Portfolio = Credit Portfolio Classification (Final balance): Cosif 3.1.0.00.00-0; Cosif 7.1.0.00.00-8: Operating income; Cosif 8.1.0.00.00-5: Operating income: (Cosif 6000000-2).

In this way, the accruals through the variation in net expenses with provisions for credit operations, divided by the total credit operations ($VDLoc_{it}$), were adapted to the market and the reality of Brazilian cooperativism. Taking into account that the literature indicates that the volume of credit granting impacts on the economic development of these institutions, such accruals can signal evidence of earnings management through income smoothing (Bressan, Souza & Bressan, 2017).

The variation in credit operations (VOC_{it}) indicates the variation in credit operations and ($RNDoc_{it}$) is the result before net expenses with provisions for credit operations, divided by the total of credit operations. According to Maia *et al*. (2013), when this indicator shows growth, the expectation is that there will also be an increase in net provision expenses, in view of the decrease in profit and smoothing of the final result.

Next, the variable ($OpVenc_{it}$) is the overdue loan operations (from levels B to H), divided by the total classified portfolio. It is relevant in determining the probability of insolvency of Brazilian CUs and in determining the influence with the proposed dependent variable, based on Bressan, Bressan & Silva Júnior (2016). Like other financial institutions, CU classifies credit operations in ascending order of risk, according to Resolution nº. 2,682 (BRASIL, 1999) at levels AA, A, B, C, D, E, F, G, and H, defining a minimum level of provision for each level of risk - which varies between 0.5% for level A and 100% for level H - and establishes that the allowance for doubtful accounts must be constituted by an amount at least equal to the sum of the provisions constituted for each of the risk levels. In this study, overdue credit operations from level B to H will be considered.

The variable ($Spread_{it}$) is measured by the difference between the loan rates charged to borrowers and the funding rate paid to customers (Maia *et al.*, 2013). His interpretation considers "the bigger the better". However, the CUs seek a balance between their economic and social performance, since the profits for these institutions are, in fact, surpluses or surpluses determined by the result of the products and services performed to these same members. Therefore, the management challenge becomes, then, to identify which rates are advantageous to the members and sufficient for the cooperative not to compromise its operational efficiency (Canassa & Costa, 2018) and, at the same time, to make this trade-off also do not compromise your results at the end of the period. As a result, the greater the spread adopted by the credit union, the greater the excess, and perhaps the greater the net expenses for the allowance for doubtful accounts.

The variable ($Desemp_{it}$) will be used as the CPLA proxy for performance, as it measures the growth of the Adjusted Shareholders' Equity of financial cooperatives. Therefore, constituting an important indicator for these institutions as it relates the surpluses of the years to the increase in capital stock, reserves, and also, the payment of shares (Cordeiro *et al.*, 2018; Maia *et al.*, 2013; Vieira, 2016). In order to obtain this variable, the changes in adjusted equity in relation to the previous year will be used.

Finally, to measure cooperative governance practices, a governance proxy ($IGCoop_{it}$) was used, where 17 questions were extracted from the research carried out by CBB (2014), obtained exclusively through secondary data on the CU websites and publications over the internet, in order to avoid the bias of the respondent and show from the perspective of publicity whether the Brazilian CU adopt the corporate governance practices indicated by CBB. Thus, a construct with dichotomous variables is proposed, assigning the number 1 (one) for positive responses and 0 (zero) otherwise. In this way, it is possible to calculate the IGCoop individually with a variation from 0 (zero) to 17 (seventeen) points. Finally, it is also possible to obtain the sample index in percentage. The same methodology can be observed in the work by Silva *et al.,* (2022). Furthermore, the index is composed of three sections, namely: Representativeness and participation; Structure and participation; and Inspection.

Therefore, the proposed base model of the seminal work developed by Maia *et al.* (2013), using discretionary accruals as a dependent variable to test income smoothing. In this sense, the following model was used:

$$VDLoc_{it} = \beta_0 + \beta_1 VOC_{it} + \beta_2 RNDoc_{it} + \beta_3 OpVenc_{it} + \beta_4 Spread_{it} + \beta_5 Desemp_{it} + \beta_6 Classif + \beta_7 IGCoop_{it} + \varepsilon_{it} \quad (1)$$

During data processing, outliers were found. According to Becker (2015), outliers change the statistical values, making it necessary to apply treatment criteria. In this case, the limits of means plus or minus three standard deviations were used, where any values that extrapolate these limits are eliminated. Thus, 3 institutions were eliminated from the sample, resulting in a final value of 92 CU.

The proposed analysis was performed using linear regression, as it allows the study of one or more explanatory variables. In developing the regression model, the Weighted Least Squares (WLS) model with corrected heteroscedasticity was used, where the WLS builds new t and F statistics (Wooldridge, 2010), improving the explanatory power (R^2 and adjusted R^2) of the model. . In addition, the Variance Inflation Factor (VIF) test was performed, where no variable presented limit values above 10, as indicated in the literature. For data analysis, Gretl software was used.

4 RESULTS

4.1 Analysis of the Cooperative Governance Index (IGCoop)

The Cooperative Governance Index (IGCoop) was expressed through secondary data from 17 binary questions (yes or no), analyzed in three sections: The first section refers to representativeness and participation in the cooperative, the second section addresses the Management Structure, and in the third session concerns inspection. The results are shown in Table 2.

Table 2 Cooperative Governance Questionnaire (IGCoop)

Section 1. Representativeness and Participation		
Nº	Questions	2020
Q1	Is there a document or information about the General Assembly manual (GA)?	75,00%
Q2	Are there actions or documents adopted by the cooperative to encourage the participation of members in the GAs?	85,87%
Q3	Are the minutes of the AGs available to the cooperative members?	16,30%
Section 2. Administration Structure		

Q4	Is the social structure composed of different members, without accumulation of positions?	76,09%
Q5	Are there any indications of the training and/or qualification of the members of the councils/directories?	75,00%
Q6	Is there a Strategic Plan approved by the BD in force?	2,17%
Q7	Are the BD's duties defined in the bylaws or bylaws?	71,74%
Q8	Is there information on the remuneration of board members and executive directors?	4,35%
Q9	The management structure is composed of BD, EB e FC?	81,52%
Q10	Is it prohibited for members of the BD to hold consecutive terms?	1,09%
Q11	Is there representation of different segments (regions, professional category, external members, female) in the BD?	66,31%
Q12	Is there an internal regulation/manual or any document dealing with conflicts of interest?	52,17%
Section 3. Inspection		
Q13	Are there any formalized criteria for the composition of the Fiscal Council (FC)??	68,48%
Q14	Does the FC have regulation/bylaws?	6,52%
Q15	Is there evidence of internal audits/internal controls in the cooperative?	9,78%
Q16	Does the cooperative have institutional channels to receive complaints and claims from members?	79,35%
Q17	Are there evidences/reports from an external or independent auditor about the economic and financial position of the cooperative?	92,39%

Source: Research Result (2020).

In section 1 – Representativeness and participation, the question (Q1) presents a percentage of 75%, indicating that the cooperatives are making information or manuals available on the GM's, which in many cases the guidelines are provided for in the bylaws. However, this result represents a reduction when compared to the 85.19% of Silva *et al.*, (2022), however, there is an advance when compared to the survey of CBB (2014) with 61.60%, which indicates that on average, the CU provide information about the GM's

Question (Q3) has a percentage of 16.30%, indicating that only this percentage of CU publicize and make available the minutes of the GM's. This result demonstrates a low percentage of publicity of the guidelines discussed in the GM's, since in the survey of CBB (2014) it was identified that 80.2% of the cooperatives make the minutes of the GM's available at their headquarters, 34.2% send the minutes by e-mail or by post when requested and 3.9% make them available on sites that can be accessed by means of a member's login and password. Therefore, in terms of representativeness and participation, the Cu presents a significant index of information and actions aimed at participating in GM's, but the documents resulting from these meetings are not available to the general public.

In section 2 – Management Structure, the main findings are presented below. The (Q6) presents a percentage of 2.17% in 2020, representing a drop when compared to the 54.6% of the survey of CBB (2014). This reflects that cooperatives are not publicizing strategic planning. Question (Q8) has a percentage of 4.35%, indicating that the CU in the sample are not publicizing the remuneration of board members and executive directors. This result is consistent with the study by Silva *et al.*, (2022) which presented a percentage of 1.23%. However, it is worth mentioning that in the survey of CBB (2014) more than 20% of the institutions surveyed reported that the board and the BD are not remunerated. Thus, issues related to remuneration impact the behavior of participating agents, giving rise to conflicts in the agency (CBB, 2014).

Section 3 – Inspection presents the main results. The question (Q15) presented a percentage of 9.78%, indicating that few CU have sectors of internal audits/internal controls in their organizational charts. This result is consistent with the survey of CBB (2014), which shows that 9.4% of the CU's have their own internal audit. Question (Q17) sought to identify whether there is evidence of documents signed by internal control bodies or auditors. The results indicated that 92.39% of the institutions surveyed have documents signed by auditors, especially in the financial statements, representing an advance when compared to the survey of CBB (2014) which presented 51.6%, and Silva *et al*., (2022) presented a percentage of 65.43%.

Therefore, the general perception of this study is that the cooperatives that make up the sample encourage actions aimed at the effective participation of the cooperative members in GM's. However, it is observed that the supporting documents of such actions need to be disclosed to the general public, as in the case of the minutes of the GM's, the strategic planning and the regulation or internal regulations of the FC.

4.1 Search results

According to Table 1, the Cooperative Governance Index ("IGCoop") has an average of 8.64, corroborated by the median 10, indicating that more than half of the sample adopts governance practices, however the maximum number 13 indicates that in this group there are cooperatives with approximately 76% adherence to governance precepts, while the minimum of 1 indicates that the cooperatives that presented the lowest index have 6% adherence to good governance practices, that is, such practices are almost non-existent in some cooperatives.

Table 1

Descriptive statistics

Variable	Average	Median	Standard deviation	Minimum	Maximum
VDLoc	-0,0044	-0,0045	0,0073	-0,0260	0,0240
VOC	1,3195	1,3680	0,3289	0,0430	2,2570
RNDoc	0,1274	0,1235	0,0495	0,0040	0,3600
OpVenc	0,9572	0,9475	0,4427	0,0620	2,2260
Spread	1,2468	1,1660	0,3733	0,5480	3,3770
Desemp	1,2080	1,1620	0,7805	0,0420	8,2410
IGCoop	8,6413	10,0	3,1259	1	13

Source: Research Result (2020).

The descriptive statistics of the variables indicate that the cooperatives studied in the sample in 2020 do not have large variations, when observing the minimum and maximum values, with the exception of the variables ("Desemp") and ("IGCoop"), which indicate that the sample presents a great heterogeneity in the studied period.

The variable ("VDLoc"), with a median of -0.0045, indicates that half of the sample decreased by more than 0.45% in relation to total credit operations in the previous period. The variable ("VOC"), which indicates the variation of credit operations in the year studied in relation to the previous year, has a median of 1.3680 and an average of 1.3195, indicating that, on average, credit operations increased by 136 % when compared to the previous year.

The variable ("RnDoc") had a median of 0.1274, indicating that in half of the observations of the non-discretionary results of credit operations has an increase of 12.74% when compared to the previous year. The minimum value of 0.0040 and maximum of 0.3600 does not show high heterogeneity of this variable in the CC segmented at level S4 in the year 2020. The same can be observed in the minimum and maximum values of the variables ("OpVenc") with a minimum of 0.0620 and maximum of 2.2260 and ("Spread"), with minimum of 0.5480 and maximum of 3.3770. However, the variable ("Desemp"), with a minimum of 0.0420 and a maximum of 8.2410, shows high heterogeneity in the researched sample and the median of 1.1620 indicates that in half of the observations there was an increase of 116% when compared to the previous year. Thus, it is clear that the cooperatives studied in the sample have very different performances from each other.

Table 3
Regression Results

Base Model:

$$VDLoc_{it} = \beta_0 + \beta_1 VOC_{it} + \beta_2 RNDoc_{it} + \beta_3 OpVenc_{it} + \beta_4 Spread_{it} + \beta_5 Desemp_{it} + \beta_6 Classif + \beta_7 IGCoop_{it} + \varepsilon_{it} \quad (1)$$

Variables	Coefficient	Standard Error	t-statistic	p-value
Constant	0,009	0,003	3,196	0,002**
VOC	−0,003	0,002	−1,457	0,049**
$RNDoc$	0,037	0,020	−1,830	0,071*
$OpVenc$	−0,000	0,000	−0,7161	0,476
$Spread$	−0,004	0,003	−1,511	0,135
Desemp	−0,005	0,0015	−3,068	0,003***
Classif	−0,002	0,001	−2,561	0,012**
IGCoop	−0,000	0,000	−2,157	0,034**
R-square		0,8930	Adjusted R-square	0,8841
F(7, 84)		100.1709	*p-value* (F)	0,000

Note. Model without evidence of excessive multicollinearity, by the Belsley-Kuh-Welsch collinearity diagnosis. Legenda: VDLoc: variation in net expenses with Allowance for Doubtful Accounts; VOC: variation in the volume of credit operations; RNDoc: non-discretionary result of credit operations; OpVenc: overdue operations; e Spread: Difference between loan rates ($GerOR$) and borrowing ($CustoCap$); Desemp: Adjusted Shareholders' Equity Growth; Classif: Dichotomous variable, assigning 1 to cooperatives classified as Full and 0 (zero) to classic ones; IGCoop: Cooperative Governance Proxy obtained by the sum of the questionnaire. Significance: ***: 1%, **: 5% *: 10%.

The (“IGCoop”), which is the variable that reflects cooperative governance practices, presented statistical significance at the level of 5% with a negative coefficient for the sample and year studied. Thus, it is highlighted that cooperative governance negatively influences income smoothing, confirming the research hypothesis. Thus, higher governance levels tend to reduce the variation in net allowance for loan losses.

The variable (“VOC”) presented statistical significance at 5%, showing that the variation of credit operations has a negative influence on the prediction of income smoothing in the sample and year covered in this study, that is, the higher the discretionary result, the lower the variation in credit operations. This result differs from the studies by Maia *et al.*, (2013), where they found that a greater volume of credit operations will lead to a greater variation in net expenses with allowance for loan losses.

The variable (“RnDoc”) presented a statistically significant result at the level of 10% in the prediction of net expenses with provision showing a positive sign, revealing evidence of earnings management in the sample used in the year surveyed. Therefore, net expenses with provisions were a path used to reduce the variation in results. The same observed variable proved to be significant and with a positive sign in the results of Maia *et al*., (2013), Bressan, Bressan and Silva (2016), Bressan, Souza and Bressan (2017) and Santos and Santos (2020).

Regarding the variable (“OpVenc”), which are overdue credit operations, it did not show significance for the econometric model used, not presenting itself as an instrument for income smoothing for the sample and year studied. This result differs from that found by Santos and Santos (2020), who emphasize that a greater appropriation with net expenses with allowance for loan losses is related to a lower proportion of overdue operations. The same can be seen in the variable (“Spread”), which was not statistically significant, evidencing that the excess difference between the loan and funding rate did not generate an impact on net expenses with allowance for loan losses. This result differs from the findings of Santos and Santos (2020), which presented statistical significance at a level of 5%.

With regard to the variable ("Desemp"), that represent performance, it presented statistical significance at the level of 1% with a negative coefficient, indicating that the lower the performance, the greater the variation in net expenses with allowance for loan losses.

Finally, the variable ("Classif"), which concerns the classification of cooperatives in the sample into full and classic, showed statistical significance at the level of 5% with a negative coefficient, in line with what was proposed in this research and indicating an inverse relationship between the single credit union to be classified as “full” and the variation of net expenses with allowance for loan losses. This result is related to the fact that such credit unions are more robust in terms of service provision, since they can practice all permitted activities, while classic credit unions have some restrictions (Brasil, 2015).

5 CONCLUSIONS

The study sought to verify whether governance practices influence earnings management in Brazilian CU belonging to segmentation at level S_4 in the year 2020. Thus, through a linear regression by Weighted Least Squares with corrected heteroscedasticity, it was possible to observe that the cooperatives that make up the sample, in the year studied, show signs of income smoothing and that higher levels of governance would reduce the variation in net expenses with allowance for loan losses, in the sample and year surveyed, thus confirming the research hypothesis.

In addition, through a binary questionnaire of 17 questions, extracted from the survey of CBB (2014), whose data were collected using information available over the internet, it was possible to reach an Index of Cooperative Governance (IGCoop) where issues of representativeness and participation, structure and participation and oversight. It is important to highlight that the contribution of this study reinforces the importance of cooperative governance in these institutions, whose influence seeks to shape the agent's behavior in favor of the interests of the cooperative community. The limitations of this work lie in the possibility that some governance practices are adopted by credit unions, but they are restricted to users using login and password, not being identified through secondary data, as identified in the study by Silva *et al.*, (2020).

For future studies, more years are suggested for the analysis so that it is possible to analyze the evolution of practices and their effects on income smoothing. In addition, a study focused on the performance of these institutions is suggested, since this variable showed that the cooperatives have different performance from one another. Therefore, this work contributes to the discussion on cooperative governance and earnings management, however the topic is far from being exhausted, since for Brachak *et al.* (2021) the levels of governance tend to increase as cooperatives absorb these practices in their daily lives, taking them as something normal and independent of rules and norms.

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