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## Sensitivity of Sustainability to Cooperativism and Corporate Governance

### ABSTRACT

**Objective:** Analyze the influence of the principles and values of cooperativism in the relationship between the mechanisms of corporate governance and the sustainability of agricultural cooperatives in southern Brazil.

**Method:** The research was carried out through the application of a questionnaire with 42 closed questions, answered by 104 agents of corporate governance of agricultural cooperatives located in the southern region of Brazil.

**Originality/Relevance:** There is a gap in the literature regarding the simultaneous approach to the principles and values of cooperatives, corporate governance and sustainability practices adopted by agricultural cooperatives.

**Results:** Through the modeling of structural equations, the perceptions of corporate governance agents of the researched agricultural cooperatives were analyzed, and it was found that: (i) corporate governance positively influences sustainability; (ii) the principles and values of cooperativism positively influence sustainability; (iii) the positive association between corporate governance and sustainability becomes more accentuated by the practice of the principles and values of cooperativism.

**Theoretical/Methodological contributions:** Respect for the principles and values of cooperativism must be a priority in cooperatives that aim to maintain sustainability in the economic, environmental, and social pillars. In addition, corporate governance reduces agency conflicts between agent and cooperative (main), keeping all stakeholders satisfied with sustainability.

**Keywords:** Agricultural Cooperatives. Triple Bottom Line. Governance Agents.

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## 1 INTRODUCTION

Cooperatives are mutual aid organizations that aim to promote entrepreneurship through the union of people with common goals (Organização das Cooperativas Brasileiras [OCB], 2016). Cooperativism, in essence, promotes the joint economic growth of its members, generated by voluntary participation in maximizing the results of the cooperative (Bialoskorski Neto, 2007).

In addition, cooperatives are grounded in the principles and values of cooperativism. The principles and values underlie the performance of cooperatives, aligning activities with the essence of cooperation, to maintain the economic, environmental, and social continuity of the cooperative members and the cooperative (OCB, 2016).

Cooperatives have a diffuse ownership structure, whose principles and values establish the free membership of new members (Silva, Sousa & Leite, 2011; OCB, 2016; Carpes & Cunha, 2018). In Brazil, cooperatives have their legal basis, which determines and requires a minimum corporate governance structure. Corporate governance practices protect collective interests and democratic management, avoiding agency conflicts and improving accountability (Silva *et al.*, 2011; Carpes & Cunha, 2018).

In unfavorable moments, such as crises, the cooperative can present itself with a competitive advantage concerning other organizational types based on its principles and values and good corporate governance practices (Gimenes & Gimenes, 2007; Suszek, 2012). Cooperative principles and values and corporate governance contribute to the development of a sustainable organization, taking into account aspects related to the management of the cooperative and its relationship with its members and the community. Adopting strategies that encourage the participation of cooperative members in assemblies and decision-making processes is essential to keep the cooperative active, active and sustainable (Fulton & Adamowicz, 1993; Bialoskorski Neto, 2007; Fontes Filho, Ventura & Oliveira, 2008).

Despite the assumption that cooperative principles and values lead to organizational sustainability, research indicates that many cooperatives do not have a balance between economic, social, and environmental pillars (Veber, Lengler, Oliveira, Estivalet & Kneipp, 2016; Carneiro, Arruda & Leite, 2018; Rocha & Steiner Neto, 2019). The imbalance is due to the prioritization of a single sustainability pillar or the absence of practices that involve the other pillars.

The study by Veber *et al.* (2016) shows evidence of the disparity between the pillars. They identified weaknesses in the social aspect when studying a Health Care Cooperative, while Carneiro, Arruda and Leite (2018) did not observe information related to economic sustainability indicators in their multi-case study of four agricultural cooperatives. In turn, when investigating two agricultural cooperatives, Rocha and Steiner Neto (2019) found that the economic dimension prevails over the others.

Rocha and Steiner Neto (2019) and Veber *et al.* (2016) addressed sustainability practices in the environment of cooperative organizations. Aspects of corporate governance in cooperatives were considered in investigations by Schaffer and Crepaldi (2013), Silva, Souza e Silva (2015), and Friedrich, Macagnan, Bagatini, Grando & Freitag (2015). The alignment of sustainability practices to cooperative principles and values researched by Morais, Siqueira & Silva (2020), Carneiro *et al.* (2018), and Viana, Vacaro and Venzke (2018).

However, there is a gap in the Brazilian literature regarding the effect of the simultaneous approach of cooperative principles and values and corporate governance in adopting sustainability practices by agricultural cooperatives. In addition, the study considers sustainability as an aggregate measure, including practices in the social, environmental, and economic dimensions (Elkington, 2011).

In this perspective, the following research question is presented: what is the influence of the principles and values of cooperativism in the relationship between the mechanisms of corporate governance and the sustainability of agricultural cooperatives? The research aims to analyze the influence of the principles and values of cooperativism in the relationship between the mechanisms of corporate governance and the sustainability of agricultural cooperatives. The analysis is developed from the perception of agents of corporate governance bodies linked to the investigated cooperatives.

Agricultural cooperatives contribute to the inclusion of rural producers in the agribusiness market, especially small and medium-sized ones, enabling cooperative members to add value to their products, generating competitiveness and helping regional development (Kumar, Wankhede & Gena, 2015; Oliveira & Wander, 2015; Oliveira & Wander, 2015). 2020). The cooperative assumes the role of inclusion that allows its members to compete with large companies through professional and joint management (Oliveira & Wander, 2020). Cooperatives occupy an important position in agribusiness development, as they assist members in using resources and inputs, marketing and distribution channels, and adding value to the product (Kumar *et al.*, 2015).

The southern region of Brazil records the performance of 231 agricultural cooperatives, employing approximately 162,226 people and integrating 570,297 families (OCB, 2020). Therefore, maintaining sustainability is essential for them to operate in the market competitively, generating wealth for their associate members and contributing to sustainable development (Veber *et al.*, 2016; Aris, Marzuki, Othman, Rahman, & Ismail, 2019).

The results of this research demonstrate that corporate governance and cooperative principles and values influence the sustainability of agricultural cooperatives. The study's findings are important as they make it possible to verify that the mechanisms of corporate governance can be effective in achieving sustainability, given that they bring more transparency to the management of the cooperative, as well as encourage other cooperative members to participate in the structures of governance.

Additionally, the principles and values also act as guides for the practices developed in the cooperative, contributing to the continuity of the business and the development of a sustainable organization. Finally, the mechanisms of corporate governance and the principles and values of cooperativism align the cooperative's management with the cooperative members' interests, including economic, environmental, and social sustainability.

## 2 THEORETICAL REFERENCE

### 2.1 Principles and Values of Cooperativism, Corporate Governance, and Sustainability

The objective of cooperativism is mutual and sustainable economic growth, stimulating social inclusion and democratic management, which offers cooperative members the right to vote in the deliberations of assemblies (OCB, 2016).

In addition to the organizational structure and legal regime that characterize the organization, cooperatives are based on the principles and values of cooperativism. The principles include voluntary and free membership, democratic management, members' economic participation, autonomy and independence, education, training and information, inter-cooperation, and interest in the community (OCB, 2016). According to the International Cooperative Alliance (ICA) (2020), "the principles are the guidelines by which cooperatives put their values into practice."

The principles are inspired and acquire strength and meaning in the values. "Values constitute the 'force ideas' from which motivating energy and inspiration for cooperative action, which is governed by principles, emanate" (Schneider, 2012, p. 8). Cooperatives must support the following values: self-help, self-responsibility, democracy, equality, equity, and solidarity (ACI, 2020). Traditionally, cooperative members believe in the ethical values of honesty, social responsibility, and caring for others (ACI, 2020).

The principles and values of cooperativism constitute the cooperative's identity, guided by democratic management and based on meeting the cooperative's needs: generation of work and income, social role, regional development, and local development (OCB, 2016).

In turn, cooperatives' corporate governance guarantees members' interests, making management more democratic and minimizing conflicts of interest. Corporate governance mechanisms make management more transparent and aligned with the interests of cooperative members, contributing to sustainability (Bortoluzzi, Leismann & Johann, 2016). In addition, they help to achieve sustainability in its three dimensions, as they provide more transparency, contribute to ethical management and promote democratic management (Friedrich *et al.* 2015; Viana *et al.* 2018).

In this sense, the management challenge is to ensure the interests of the cooperative members as it works to make the cooperative a sustainable enterprise, not only concerning the economic dimension but also in the social and environmental dimensions (Morais *et al.*, 2020). This contributes to promoting local sustainable development and income generation for cooperative members (Viana *et al.*, 2018).

Schneider (2015) argues that cooperatives have mechanisms that can contribute to sustainable development, such as democracy and the participation of cooperative members in the decision-making process, which are part of their organizational structure. Sustainable development is also perceived as meeting community aspirations and social needs (Morais; Siqueira & Silva, 2020).

Additionally, compliance with the social function of the cooperative is important, given that it reflects its mission to improve the lives of its members and assist in the development of the region in which it operates (Kyazze, Nkote & Wakaisuka-Isingoma, 2017). This purpose is also reflected in the seventh cooperative principle, which highlights the interest in the community, while the cooperative contributes to the sustainable development of the region where it is located (OCB, 2016). Corporate governance used in the cooperative environment can improve the transparency of actions and help reduce conflicts of interest, as it makes management monitoring more effective, contributing to achieving sustainability (Fontes Filho *et al.*, 2008; Pies, Baggio & Romeiro, 2016; Carpes & Cunha, 2018; Maciel, Seibert, Silva, Wbatuba & Salla, 2018).

In this sense, research hypothesis 1 is presented:

H<sub>1</sub>: corporate governance positively influences the sustainability of agricultural cooperatives.

Cooperatives have, in their essence, principles, and values that are intertwined with sustainability. Even so, applying practices aimed at sustainable business development is often seen as difficult, even in cooperatives (Viana *et al.*, 2018). Formalizing sustainability-oriented strategies can help implement sustainable practices consistent with cooperative principles and values (Battaglia, Bianchi, Frey & Passetti, 2015).

To verify the alignment of cooperative principles and values with sustainability, Viana *et al.* (2018) interviewed cooperative managers and identified the promotion of different practices related to sustainability; however, they did not identify formal management through policies, goals, and monitoring in any of the cooperatives. Aligning and managing the sustainability

practices adopted following cooperative principles and values can be an important differential for cooperatives due to their very essence of collectivity and democracy (Viana *et al.*, 2018).

Fernandez-Guadanõ, Lopez-Millan and Sarria-Pedroza (2020) highlight that the cooperative has sustainability rooted in its business due to its cooperative principles and values that promote democratic management and mutual help, helping the community and improving the quality of life of the cooperative.

The evidence from Carneiro *et al.* (2018) indicates organizational practices that operationalize cooperative principles linked to the social and environmental dimensions but not to the economic dimension.

In this sense, research hypothesis 2 is presented.:

H<sub>2</sub>: the principles and values of cooperativism positively influence the sustainability of agricultural cooperatives.

The democratic management model by which cooperatives are guided, in line with cooperative principles and values, provides management carried out by their associated members, democratizing the business and contributing to sustainable development (Fernandez-Guadanõ *et al.*, 2020). Furthermore, Fernandez-Guadanõ *et al.* (2020) analyzed the value generation of Spanish cooperatives to their stakeholders. They identified that, regarding the associate member, being part of the cooperative contributes to a greater income generation than if they were working on their own, demonstrating that the cooperative fulfills its function of maximizing the results of the cooperative members.

Rocha and Steiner Neto (2019) found that cooperatives formulate their strategies according to the pillars of sustainability. However, there is no balance between the pillars, with the prevalence of the economic dimension. Carneiro *et al.* (2018) suggest that the principles and values of cooperativism align with the pillars of sustainability. The principles and values of cooperativism contribute to the achievement of sustainability, considering that cooperatives have in their essence the tendency of collectivity, the generation of income for their members, and the concern for the community where they are inserted (Abarghani, Shobeiri, Meiboudi, 2013; OCB, 2016).

In addition, corporate governance mechanisms must be guided by the principles and values of cooperativism, due to its relevance to the cooperative model (OCB, 2016). Corporate governance can enable more transparent and democratic management, as advocated by the principles and values of cooperativism (Bortoluzzi *et al.*, 2016). The cooperative model is fairer and more equitable; democracy and the participation of cooperative members in the decision-making process contribute to the sustainable development of the cooperative, the cooperative members, and the community where the cooperative is inserted (Schneider, 2015).

Cooperatives have emerged as an important model for solving social and economic problems caused by capitalism. In this perspective, cooperative organizations emerged to promote local development sustainably and with a focus on the community. The cooperative's governance structure is aimed at serving various stakeholders (members, employees, governments, and the community in general), working in the constant search for local economic development (Bretos & Marcuello, 2016).

In this perspective, research hypothesis 3 is presented:

H<sub>3</sub>: the positive association between corporate governance and sustainability becomes more accentuated by the practice of the principles and values of cooperativism.

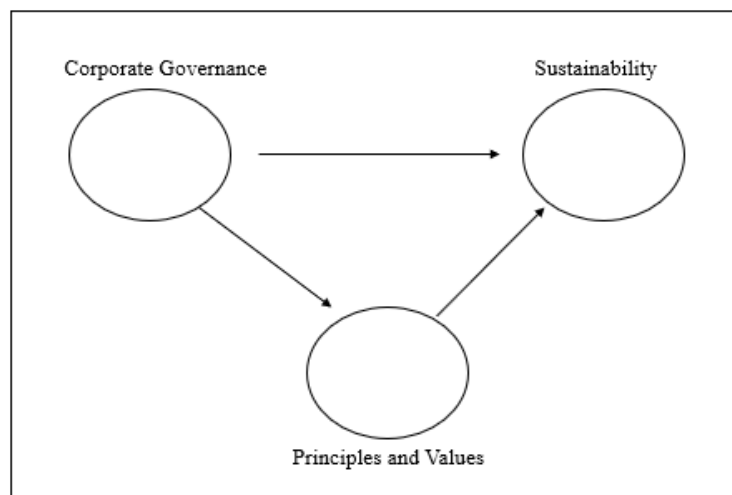
### 3 METHODOLOGICAL PROCEDURES

As for the objectives, the research is characterized as descriptive; as for the procedures, it is characterized as a survey, and the approach is quantitative. The survey was developed using a standardized questionnaire (Appendix I) with 42 questions, divided into four blocks: (i) characterization of respondents; (ii) agents' perception of corporate governance mechanisms (Davis & Bialoskorski Neto, 2010; Sistema OCB, 2016); (iii) respondents' perception of the principles and values of cooperativism (Davis & Bialoskorski Neto, 2010; OCB, 2016); (iv) respondents' perception of economic, environmental and social sustainability (Veber *et al.*, 2016). In blocks 2, 3, and 4, the 5-point Likert scale was used (1 for totally disagree and 5 for totally agree) to measure the respondents' perception.

Before sending the official questionnaire to the respondents, two pre-tests were sent to governance agents who proposed to participate in this research stage. The objective of the pre-test was to verify the understanding and the quantity and quality of the questions sent. After the pre-test feedback was received, the observations of the respondents were accepted, and the questionnaire was adjusted to improve the understanding and number of responses to be obtained. After the pre-test stage, the official questionnaire was sent to the corporate governance agents of agricultural cooperatives in southern Brazil. Again, 104 spontaneous and valid responses were received, constituting the research sample. The surveyed agents occupy positions on the executive board, board of directors, fiscal council, and audit committee (internal and external audit).

The collection was carried out from 07/01/2020 to 09/30/2020 through the Google Forms electronic platform. The list of active cooperatives was extracted from the official website of cooperative organizations in the states of Santa Catarina (OCESC), Paraná (OCEPAR) and Rio Grande do Sul (OCERGS). Telephone contact was made with the cooperatives to talk to the governance agents about the purpose of the study, to obtain the e-mails for the respective sending of the questionnaires, and to encourage them to respond. In cooperatives where it was not possible to contact the governance agent directly, it was possible to talk to the executive secretary, who forwarded the agents' e-mail addresses or the questionnaire to the agents and explained the purpose of the research.

The Google Forms platform also controlled the number of responses obtained; however, because the survey did not identify the respondents, it was impossible to know which agents responded. Thus, a second telephone contact was also made to confirm which governance agents had answered the questionnaire. After data collection, descriptive analysis and structural equation modeling techniques were used using the Smart PLS 3® software. Structural equation modeling examines a series of dependency relationships simultaneously, which "is useful for testing theories that contain multiple equations involving dependency relationships" (Hair, Black, Babin, Anderson & Tathan, 2012, p.532). Figure 1 presents the research design.



**Figure 1.** Research design  
 Source: prepared by the authors.

#### 4 DATA DESCRIPTION AND ANALYSIS

Table 1 presents respondents' participation in the cooperative's corporate governance structure.

**Table 1**  
**Characterization of the 104 respondents**

<b>Participation of agents in governance structures</b>	<b>No</b>	<b>%</b>
Committees	7	7
Advices	18	17
Board of Directors	39	37
Board and Committees	10	10
Board and Councils	30	29
Total	104	100

Source: Research data.

Table 2 presents the descriptive statistics of corporate governance constructs, principles and values, and sustainability. The minimum and maximum values presented refer to the grouped latent variables of each construct.

**Table 2**  
**Descriptive statistics of the constructs**

<b>Construct</b>	<b>No</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Average</b>	<b>Standard deviation</b>	<b>Latent Variables</b>
Corporate governance	104	1	5	4,08	0,57	12
Principles and Values	104	1	5	4,45	0,35	9
Sustainability	104	1	5	4,23	0,52	15

Source: Research data

The construct of principles and values was the one that presented the best average (4.45) among the three analyzed. It is possible to verify that, in general, cooperatives know and use cooperative principles and values. Cooperatives must base their strategies on the cooperative principles and values unique to this organizational model.

The principles and values play a fundamental role in the conduct of a cooperative's business, as they are the ones that guide them so that they do not lose their essence and

contribute to the cooperative reaching the desired level of sustainability. Thus, the research results are promising in explaining the concern of cooperatives to maintain their principles and values for the perpetuity of their businesses.

The second highest average (4.23) concerns sustainability and considers that, in general, cooperatives use the sustainability practices mentioned in the construct. Sustainability integrates cooperative principles and values to promote cooperative work, social inclusion, and generating wealth for the associate, contributing to the development of the region where the cooperative operates (Silva, Mariano & Albino, 2020) and awareness of the environment through environmental education and directing the most ecologically efficient production processes (Morais *et al.*, 2020). Likewise, cooperatives are characterized as a fair and equitable organizations, with the participation of the associated member in the decision-making process, and these factors also contribute to making it sustainable (Schneider, 2015).

Corporate governance presented an average of 4.08. It can be observed that cooperatives are more concerned with cooperative principles and values when compared to corporate governance mechanisms. However, the finding is still relevant, as it demonstrates that cooperatives have also used governance mechanisms, which is an important indication given the role that corporate governance plays in organizations, contributing to monitoring and control, in the transparency of accountability, and in encouraging the participation of cooperative members (IBGC, 2015).

The analysis of the responses obtained from the proposed construct (Appendix I) was also performed using the structural equation modeling method. The initial evaluation of the model with all the questions used in the constructs pointed out the need to remove some questions to guarantee the minimum reliability and validity parameters.

The following questions were removed in the Corporate Governance construct: GC\_1, GC\_2, GC\_3, GC\_4, GC\_5, GC\_7. In the construct of Principles and Values of Cooperativism, the following questions were removed: PV\_1, PV\_2, PV\_3, and PV\_4. Finally, in the Sustainability construct, the following questions were removed: AS\_1, SE\_1, SE\_3, SS\_1, SS\_3. The exclusion of questions was necessary to guarantee the reliability of the constructs used in the research. Cronbach's Alpha, Composite Reliability, and the Average Variance Extracted (AVE) measured reliability (Ringle, Silva & Bido, 2014). The measurement model was generated from Bootstrapping with 5000 observations (subsamples generated by PLS-SEM) which, according to Bido and Silva (2019), is used to obtain the p-values of the correlations between latent variables and factor loadings. Prado, Korelo and Silva (2014) also recommend using Bootstrapping because, with the Sobel test, the assumption of normality almost always does not happen.

To attest to the reliability and validity of the construct, Cronbach's Alpha  $> 0.7$ , composite reliability  $> 0.7$ , and AVE  $> 0.5$  are desirable (Ringle *et al.*, 2014). Traditionally, Cronbach's Alpha is used based on the intercorrelations of variables to ensure convergent validity. However, Composite Reliability is more suitable for PLS, as it prioritizes variables according to reliability, with Cronbach's Alpha being very sensitive to the number of variables in each construct (Ringle *et al.*, 2014).

All constructs (Table 3) meet the criteria except for the AVE of the principles and values construct. Considering that questions with low factor loadings had already been excluded in this construct, it was decided to keep the existing questions with a low CVA close to 0.5 (Bido & Silva, 2019). The maintenance of the variable with low AVE is possible because the composite reliability was shown to be  $>0.7$  (Fornell & Larcker, 1981).



Table 3  
**Reliability and validity of the construct**

Constructs	Cronbach's alpha	Composite reliability	Average Variance Extracted (AVE)
Governance	0.847	0.884	0.525
Principles and Values	0.703	0.802	0.454
Sustainability	0.906	0.921	0.517

Constructs	Governance	Principles and Values	Sustainability
Governance	<b>0.724</b>	0.843	0.702
Principles and Values	0.667	<b>0.673</b>	0.788
Sustainability	0.647	0.704	<b>0.719</b>

**Note.** Values on the lower diagonal represent the square root of the AVE in which it can be attested that there is discriminant validity, and on the upper diagonal, the HTMT < 0.85.

Next, on the diagonal, the discriminant validity is presented. It is possible to observe that the construct meets the Fornell-Larcker criterion, which proposes that the "AVE of each variable must be greater than the highest squared correlation of the latent variable with any other latent variable" (Vieira, Kunkel & Righi, 2011, p. 6). On the upper diagonal, additionally, the Heterotrait-Monotrait Ratio (HTMT) is presented, in which it is also possible to attest to the discriminant validity that is confirmed when the HTMT is < 0.85 (Bido & Silva, 2019).

Table 4 shows the predictive validity criteria.

Table 4  
**Predictive validity**

	F <sup>2</sup>	adjusted R <sup>2</sup>	Q <sup>2</sup>
Principles and Values	0.800	0.439	0.170
Sustainability	0.301	0.544	0.246

Initially, for F<sup>2</sup> (Cohen's indicator), the validity criteria are 0.02 = small, 0.15 = medium, and 0.35 = large (Ringle *et al.*, 2014); it is clear that the standard was met. The R<sup>2</sup> indicates the quality of the adjusted model, in this case fitting as a large effect (R<sup>2</sup> > 26%) (Ringle *et al.*, 2014). Finally, in the case of Q<sup>2</sup>, the closer to 1, the better (Ringle *et al.*, 2014). It is possible to observe in Table 4 that all criteria are met to assess the prediction quality of the model used. Another assumption of the model is the absence of multicollinearity in the variables of the constructs, measured by the Variance Inflation Factor (VIF). The test indicated a variation between 1.252 and 3.509. Therefore, there is no multicollinearity, given that the VIF is <5 (Bido & Silva, 2019).

The measurement model was generated from Bootstrapping with 5000 observations (subsamples generated by PLS-SEM), which according to Bido and Silva (2019), is used to obtain the p-values of the correlations between latent variables and factor loadings.

Table 5 presents the path coefficient and the analysis of the structural model.

Table 5  
**Path coefficient and structural model analysis**

	Coef. β	T-Value	P-Value	Hypotheses	Validation
Corporate governance → Sustainability	0.319	2.675	0.007***	H1	Ok
Principles and Values → Sustainability	0.492	4.292	0.000***	H2	Ok
Corporate governance → Principles and Values → Sustainability	0.328	4.200	0.000***	H3	Ok

Note. \*p<0,10; \*\*p<0,05; \*\*\*p<0,01.

Source: Research data

Caption: Validation: a confirmed hypothesis.

The first research hypothesis (H1), "corporate governance positively influences the sustainability of agricultural cooperatives" was confirmed by observing the direct and significant effect on the structural model, at a significance level of 1%. In this way, it is possible to keep that corporate governance influences cooperatives to achieve sustainability in the agents' perception.

This finding corroborates previous studies that the presence of governance mechanisms in cooperatives can help for more ethical and efficient management (Friedrich *et al.*, 2015), in addition to reducing conflicts of interest between cooperative members who occupy the management positions and the other cooperative members (Maciel *et al.*, 2018). Furthermore, the result reinforces the assumption that corporate governance applied to the cooperative environment contributes to achieving sustainability (Bortoluzzi *et al.*, 2016).

The result is relevant when considering that for agricultural cooperatives, achieving sustainability can be challenging due to the market in which they operate and the need to remain competitive and serve their stakeholders, especially cooperative members (Rocha & Steiner Neto, 2019). The findings support the expectation that corporate governance can lead to the sustainable growth of the cooperative based on democratic and transparent management (Bortoluzzi *et al.*, 2016; Viana *et al.*, 2018).

Additionally, Maciel *et al.* (2018) consider that corporate governance helps in the professionalization of cooperative management, improves the relationship with cooperative members, provides more transparency to actions, and reduces conflicts of interest that may compromise its development, contributing to the achievement of sustainability.

Then, it is observed that the second research hypothesis (H2), "the principles and values of cooperativism positively influence the sustainability of agricultural cooperatives," can be confirmed as a result of the direct and significant effect at the level of 1%.

The result is in line with Morais *et al.* (2020), arguing that management is expected to be based on ethical values, transparency, and commitment to sustainability in a cooperative supported by its principles and values. Viana *et al.* (2018) note that, due to their principles and values, cooperatives have in their essence the sense of collectivity, democracy, and mutual help. This way, managing the sustainability practices adopted by cooperatives following cooperative principles and values can be an important differentiator. In addition, they provide their cooperative members with income generation and improvement in the quality of life, help the development of the region in which they operate, and generate value for their stakeholders (Fernandez-Guadanó *et al.*, 2020).

The third research hypothesis (H3), "the positive association between corporate governance and sustainability becomes more accentuated by the practice of cooperative principles and values," is also confirmed at the 1% significance level. As Bido and Silva (2019) teach, when the direct effect is significant, the mediation of the indirect impact is characterized as partial. Therefore, it is possible to observe that the principles and values of cooperativism act as mediators in the influence of corporate governance on sustainability.

Carpes and Cunha (2018) argue that corporate governance makes it possible to improve management, avoiding the emergence of agency problems through governance practices. In this sense, when cooperative management is guided by cooperative principles and values and has corporate governance mechanisms in place, these factors contribute to sustainability (Friedrich *et al.*, 2015; Maciel *et al.*, 2018).

## 5 DISCUSSION OF RESULTS

The empirical evidence of the study allows us to consider that agents who perceive the presence of more effective corporate governance mechanisms in the management of

cooperatives also observe organizations at higher levels of sustainability. The results are consistent with the discussions by Kyazze *et al.* (2017) that corporate governance helps to increase management commitment, as governance mechanisms generate greater transparency in actions and facilitate accountability, factors that contribute to economic, social, and environmental performance.

Additionally, the principles and values of cooperativism act as important drivers for cooperatives, boosting economic development, maintaining their *raison d'être*, and moving towards the sustainable development of the organization and its cooperative members. In this way, the study's results suggest that a cooperative with strong corporate governance mechanisms supported by cooperative principles and values contribute to fulfilling the cooperative mission as a potentiator of sustainable development, concerned with the community and the environment.

Conflicts of interest are motivated by agency problems, which occur when there is a separation between ownership and control (Jensen & Meckling, 1976). Due to its corporate structure, all cooperative members are owners, but not all have access to control. In this way, ownership and control are separated, as the control is carried out by the elected members (Silva *et al.*, 2015; Maciel *et al.*, 2018).

In this way, strategic decisions can be influenced by the particular interests of the associates, which may occur through the vote of the cooperative members in the assemblies or through the decisions taken by the board of directors, which is also formed by associate members (Siqueira & Bialoskorski Neto, 2014; Silva *et al.* al., 2015).

The results reinforce the importance of implementing corporate governance mechanisms to contribute to more effective accountability to associate members, implement management monitoring mechanisms, and encourage the participation of members in governance structures, to provide greater transparency in the actions carried out by the cooperative, so that the interests of the members are effectively executed (Fontes Filho *et al.*, 2008; Friedrich *et al.*, 2015).

Thus, the cooperative can also improve its corporate image towards its stakeholders, proposing participatory management concerning actions aimed at the community and meet community demands, thus promoting engagement with stakeholders.

In addition to being concerned with economic gain, the Stakeholder Theory explains that organizations need to be attentive and engaged with the other interested parties of the organization (stakeholders), such as customers, suppliers, governments, and the community in general, among others (Freeman & Phillips, 2002). From a cooperative perspective, the stakeholder theory is appropriate as cooperatives tend to align their objectives for economic enrichment and non-economic aspects according to the cooperative essence, which stands out for its principles and values. (Harrison, Freeman & Abreu, 2015; OCB, 2016). A good relationship between the cooperative and its stakeholders can contribute to improving economic, social, and environmental performance (Pavão & Rossetto, 2015); in addition, cooperative principles and values also cover the interest in the community (OCB, 2016) in a way that the cooperative gets involved with the community in which it operates, promoting sustainable development in the region where it operates.

By building a good relationship with stakeholders, it is expected that they will return with positive attitudes, consuming products and services, providing better financial conditions, remaining loyal to the organization, or granting tax incentives (Harrison *et al.*, 2015).

Furthermore, in the cooperative context, a single person can play the role of several stakeholders, as the cooperative member is, at the same time, the owner, supplier, and customer, that is, the interested party itself (Pavão & Rossetto, 2015). In this way, the

cooperative needs to align strategies that promote the engagement of the associate member so that they feel effectively part of the cooperative, resulting in positive actions for the organization.

## 6 FINAL CONSIDERATIONS

The study analyzed the influence of cooperativism principles and values in the relationship between corporate governance mechanisms and the sustainability of agricultural cooperatives in southern Brazil. Data collection was carried out through a questionnaire with 104 corporate governance agents. Figure 2 presents the results of the hypotheses tested in the research.

Hypothesis		Expected signal	Signal obtained
H1	Corporate governance positively influences the sustainability of agricultural cooperatives.	+	+
H2	The principles and values of cooperativism positively influence the sustainability of agricultural cooperatives	+	+
H3	The principles and values of cooperativism positively mediate the relationship between corporate governance and sustainability	+	+

**Figure 2.** Hypothesis test result

Firstly, it is concluded that the presence of more robust corporate governance mechanisms is associated with a greater perception of the existence of social, environmental, and economic practices that drive organizational sustainability. In the investigated cooperative environment, the cooperatives develop actions to: reduce water consumption; encourage and educate consumers to adopt conscious and responsible consumer attitudes; offer a pleasant and safe physical environment to employees; stimulate the development of local communities; promote the voluntary work of their employees; use in their processes materials that reduce damage to the environment; encourage reverse logistics of discarded materials; implement selective collection and proper disposal of waste; and, promote environmental education for employees, their families, and the community.

Then, the findings reveal that the principles and values of cooperativism positively influence cooperatives' sustainability, considering the overall environmental, social and economic dimensions. Furthermore, the principles and values of cooperativism contribute to form the identity of the cooperative, which has different premises from other types of organizations, such as, for example, democratic management, concerned with generating income for the cooperative members and the local community. In this sense, it can be seen that the principles and values of cooperativism help the cooperative reach the desired level of sustainability, contributing to remaining active, and concerned with the community.

Finally, the results suggest that, in the researched cooperatives, the principles and values of cooperativism make the positive relationship between corporate governance and the sustainability of agricultural cooperatives more pronounced. The principles and values help form the cooperative's identity and improve the corporate governance mechanisms so that the cooperatives achieve sustainability.

The study's results contribute to the cooperative management process by demonstrating that cooperative principles, values, and corporate governance mechanisms act directly and combine to achieve sustainability. The latter improve transparency in management actions and accountability and encourage the participation of cooperative members, while the former act on the essence of cooperativism.

Sustainability is a relevant concern for managers when realizing that the principles and values of cooperativism and corporate governance are facilitating factors for achieving

sustainability. Furthermore, governance agents perceive the importance of cooperative members' participation to lead the cooperative sustainably, in the same way, that they establish strategies related to the three pillars of sustainability.

The principle of democratic management guides cooperatives and their governance agents to perceive the cooperative's role as a free organization open to new members, strengthening cooperativism and contributing to sustainable development.

The study offers a theoretical contribution by jointly discussing the three elements in the specific segment of agricultural cooperatives: cooperative principles and values, corporate governance mechanisms, and sustainability. The approach advances concerning studies with dichotomous relationships of principles and sustainability or governance and sustainability, reinforcing the assumptions of the multidimensional character of factors related to sustainability.

Despite the findings, the research has some limitations, such as the choice of researching only agricultural cooperatives, the region covered, and the volume of responses. In addition, future research may expand the geographic area and include other cooperative branches, expanding the scope of studies.

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## Sensibilidade da Sustentabilidade ao Cooperativismo e a Governança Corporativa

### RESUMO

**Objetivo:** Analisar a influência dos princípios e valores do cooperativismo na relação entre os mecanismos de governança corporativa e a sustentabilidade das cooperativas agropecuárias da região sul do Brasil.


**Método:** A pesquisa foi realizada por meio da aplicação de questionário com 42 questões fechadas, respondido por 104 agentes vinculados aos órgãos de governança corporativa de cooperativas agropecuárias localizadas na região sul do Brasil.

**Originalidade/Relevância:** Percebe-se uma lacuna na literatura quanto a abordagem simultânea dos princípios e valores do cooperativismo, governança corporativa e das práticas sustentabilidade adotadas por cooperativas agropecuárias.

**Resultados:** Por meio da modelagem das equações estruturais, foram analisadas as percepções dos agentes de governança corporativa das cooperativas agropecuárias pesquisadas e constatou-se que: (i) a governança corporativa influencia positivamente a sustentabilidade; (ii) os princípios e valores do cooperativismo influenciam positivamente a sustentabilidade; (iii) a associação positiva entre a governança corporativa e a sustentabilidade se torna mais acentuada pela prática dos princípios e valores do cooperativismo.

**Contribuições Teóricas/Metodológicas:** O respeito aos princípios e valores do cooperativismo deve ser prioridade nas cooperativas que almejam manter a sustentabilidade nos pilares econômico, ambiental e social. Além disso, a governança corporativa reduz os conflitos de agência entre agente e cooperado (principal), mantendo todos os interessados satisfeitos com a sustentabilidade.

**Palavras-Chave:** Cooperativas agropecuárias. Triple Botton Line. Agentes de Governança.

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