



Article

Sustainability Indicators: Information Asymmetry Mitigators between Cooperative Organizations and Their Primary Stakeholders

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Abstract: The research aims to identify indicators of representative information on sustainability from the cooperative organizations' primary stakeholders' perspective to mitigate information asymmetry. The study develops in seven stages: the primary stakeholders' selection and training; the evidence survey; the triangulation between stakeholder responses, forming an indicators list; the indicators analysis by specialists; tests for indicators disclosure; and the indicators validation through the disclosure analysis. As a result, a list contains 61 sustainability indicators from the primary stakeholders' perspective, in four pillars: economic, 20; social, 18; environmental, 13; and cultural, 10. With the cooperative organizations' websites disclosure analysis, we found that the disclosure policies focus more on information asymmetry mitigating in the pillars: cultural and social, with the environmental and economic being neglected. Therefore, the procedures for disclosing information on sustainability have weaknesses. These policies reduce the primary stakeholders' reliability about the cooperatives management system respective, limiting the primary stakeholders' perspective on the cooperative organization value.

Keywords: disclosure indicators; sustainability information; stakeholders; non-profit organizations



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1. Introduction

The problem established by information asymmetry, which refers to the adverse selection and moral risk emergence possibility [1,2], can also support the relationship between cooperative organizations managers and stakeholders. The adverse selection could happen whenever the members delivers their product or service to another purchasing organization due to the information lack that would refer to the cooperative organization sustainability differentials which they linked. The asymmetric information problem would result in losses of supply and cooperative organization sustainability. On the other hand, moral hazard is related to the possibility that the managers' decisions does not meet the stakeholders' interests. Thus, information asymmetry refers to the efficiency loss possibility, leading to difficulties in cooperative sustainability.

As a mitigating information asymmetry mechanism, the literature recommends organizations provide discretionary but material information that enables stakeholders to know them [1–6]. The representative and material information of their sustainability would lead to their legitimization and economic/financial valorization [7–10].

Furthermore, communication tools have significantly advanced with the information technology and the Internet advent, facilitating new communication channels and making them cheaper [9,11]. Hence, the difficulties related to the publishing information are cost-mitigated, enabling greater transparency about the managers' decisions [12]. However, in studying the information disclosure, there are challenges such as the universe of

possibilities for expressing a reality or even the fact that disclosure is an abstract concept. Face this reality: the disclosure literature recommends the use of indicators, representing information about a given reality [13–17].

The literature review on organizations' sustainability information representative indicators has been enriched in recent years. However, this enrichment focuses on the manager's choice perspective. In other words, the literature that disclosure level analyzes using information indicators constructed from the analysis of what was published is significant. Research that presents the stakeholders' perspective is much more restricted [11].

The research problem refers to the need to create indicators that allow contributions as a guide for managers to meet the stakeholders' demand on cooperatives' sustainability representative information [11,13]. Therefore, this study aims to identify indicators of representative information on sustainability from the cooperative organizations' primary stakeholders' perspective to mitigate information asymmetry. The absence of a patronized perspective on demand for information from stakeholders, who may present different interests about their economic, environmental, social, and cultural performance, points to the study's relevance.

Brazilian Cooperative Organizations [18] were chosen because they have essential participation in the Brazilian economy in the most diverse activity branches. The research development started with the primary stakeholders' selection and sustainability theme qualification. As primary stakeholders, there are members, who assume the role of cooperative owners, and collaborators, who work and depend economically and financially on cooperative organizations. Subsequently, we send a research form requesting them indicating information, referring to each sustainability pillar, which they considered significant for cooperative organizations' websites disclosing. We obtained 110 responses from 58 cooperative members and 52 collaborators, which, after more than five research stages, resulted in 61 indicators—economic, 20; social, 18; environmental, 13; and cultural, 10—which were information asymmetry mitigators on cooperative organizations sustainability. We established a simple random sample [19] composed of 91 cooperatives, of which we analyzed the respective websites.

This analysis found that disclosure policies focus on mitigating information asymmetry on the pillars: cultural and social, environmental, and economic aspects being neglected. Therefore, disclosing information policy on the cooperative organization's sustainability presents weaknesses. These results allow inferring the communicational relationship fragility between managers and primary stakeholders. In other words, the adverse selection and moral hazard problems find room to manifest themselves, consequently establishing less appreciation of the respective cooperative organization management by the primary stakeholders.

By disclosing sustainability information, cooperatives increase transparency, increasing reliability, reputation, and legitimacy and enabling strengthening the relationship between cooperatives' management and members [20]. They can also allow benchmarking concerning competitors, signal competitiveness, motivate employees, and support information by encouraging its cooperative culture [21,22]. In addition, sustainability information reporting is an essential contributing factor for organizational sustainability [23].

It is necessary to consider weakness in the managers' communication with stakeholders related to other problems, such as a lack of training or the guide inexistence for a better disclosure policy that can meet the demand for information. In this regard, this article contributes to the cooperative organizations themselves by presenting a sustainability-representative information indicators list for information asymmetry mitigation between them and their primary stakeholders, which can be used to establish strategic disclosure policies. It also contributes to regulatory and supervisory bodies that would be able to use the indicators list, setting disclosure standards for cooperative organizations, knowing these indicators are of primary stakeholders' interest and considered for the cooperative organizations' legitimization with the communities.

2. Literature Review

This topic addresses cooperative organizations, sustainability, and disclosure for mitigating information asymmetry, providing subsidies for their legitimization by their primary stakeholders.

2.1. Cooperative Organizations

A cooperative organization is an autonomous association of people united voluntarily to meet the characteristic economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled organization [24,25]. Through human and ethical values to promote social inclusion, improve income distribution, and reduce poverty, they have become a voice for communities and different economic sectors in many developing countries, supporting individuals with a collective approach [26]. Unlike corporations that can migrate from one region to another, cooperative organizations are an integral part of the local society and economy.

Cooperative organizations can help developing countries in three aspects in the economic field: creating jobs, developing strategic networks between small producers and companies, and increasing sustainable social development [27]. By helping each other, cooperative organizations contribute to the economy and society in which they are integral. They can be effective and efficient collective choices even in a capitalist system. They can also be community responses by which social actors unite as a third force, between the market and the state, to defend the public interest and social justice [28,29].

Cooperatives are strategic organizations responding and adapting to the evolution of localized and emerging social needs [30,31]. Cooperatives are based on self-help, self-responsibility, democracy, equality, equity, and solidarity. These values involve honesty, social responsibility, and care for others [24,25]. Cooperatives have mainly covered the agribusiness, consumer, credit, and health sectors [25,32–34]. However, other sectors also have initiatives in the cooperative segment, such as mining [26,32], rural electrification, and infrastructure [35].

In this sense, cooperatives have been relevant actors for supporting members' activities and developing initiatives and policies oriented toward sustainability, not only for their members but for the entire community [34]. They provide financial and non-financial gains with indirect support through the services offered [32]. Thus, the relationship between cooperatives and their members is not limited to basic operations. These organizations have dedicated efforts to implement new processes and activities that would help create more value for all [36], which needs to be made public. Unlike corporations, cooperative organizations have links with the society they are integrated. They do not move from one location to another, though they could, despite it happening often with private organizations. The closure of the activities of a cooperative organization occurs only due to the sustainability lack established by poor management or the lack of members' participation [20].

By belonging to the third economy sector, non-profit, cooperative organizations need to follow the evolution of the uses, customs, rules, and laws of a standardized development in the eminently capitalist society. In addition to adequate governance structures for their form of constitution, strategic and democratic management, and voluntary people association, they need to act within a capitalist context or be excluded [33]. Thus, the cooperative organization is also a risky enterprise that depends on the capitalist foundations and social construction [35]. However, considering the evolution of capitalist concepts, which migrate from global capitalism [37] to conscious capitalism [38], any organization must aim at sustainability, aligned with cooperative principles. This sustainability encompasses four pillars. In addition to the three pillars introduced by the triple-bottom-line: economic, social, and environmental [39], the cultural dimension is included [40,41].

2.2. Cooperative Organization Sustainability

Society is increasingly sensitive to issues related to sustainability. It is one of the principles of modern society, with the appreciation of technologies, processes, products, and min-

imal impacts on the ecosystem, organizations operating within sustainable limits [34,42]. Sustainability is a concern that permeates all society levels and has the premise that it must develop to meet the needs of the present without compromising the ability of future generations to meet their own. Economic growth must be balanced, with concerns about the protection the natural environment and humanity's social and cultural well-being [39,40,43].

The term sustainability has expanded over time, starting with the economic perspective. An organization was measured only in profitability, financial result, return on investment, or value created for the shareholder [44]. More recently, the perspective of environmental sustainability has been incorporated, which considers the environmental impact of an organization regarding the environmental resource's consumption, pollutants emissions, solid and water waste, recycling, and materials reuse, among others [45]. The social sustainability perspective was also incorporated. The quality of relations with employees, health, and safety records impacts the community and human rights in general [46], culminating in the sustainability triple-bottom-line [39,47,48].

These three aspects are considered of equal importance to enable society to continue to function. If any of the pillars are deemed weak, it compromises the entire system and makes it unsustainable. That is, there needs to be equity in relation: people, the planet, and profit. Profitability must be socio-environmental and economically correct, a constant challenge for managing organizational sustainability [39,49,50]. In this sense, while pursuing economic and social development, it is essential to consider environmental protection and social well-being. Sacrificing the environment and or social welfare for the sake of economic growth would lead to disastrous consequences for future generations [47,49,51]. This context makes evident the complex relationship between the sustainability pillars [47]. In short, what is sought is development, not just economic growth, integrating all sustainability dimensions [52].

More recently, policies and research have emerged to guide organizations to align their activities with broader sustainable development agendas, including cultural, economic, social, and environmental issues [40]. Culture is the material and immaterial attribute of society. It incorporates social organizations, literature, religion, myths, beliefs, behaviors, social practices and methods, technology use, and expressive art forms. Culture is a set of human knowledge that depends on transmitting these characteristics to future generations [22,53,54]. Therefore, cultural sustainability is a fundamental issue or a precondition to be fulfilled on the path to sustainable development. It comprised the social pillar of sustainability. However, with the recent development in this field and its growing importance, creating the cultural post of sustainability becomes imminent [53]. As Loach, Rowley, and Griffiths [40] claim, cultural sustainability has become a priority in sustainable development agendas. It is described as a fourth pillar, equal to social, economic, and environmental issues [53].

Cultural sustainability recognizes the need to preserve and transmit culture to future generations, achieved by pluralistic and transformative learning to promote social and ecological change in the capitalist system [22]. It has to do with the ability to sustain or continue with cultural beliefs and practices and preserve cultural heritage as its entity, and attempts to answer whether any culture will exist or not in the future. The importance of cultural sustainability lies in its power to influence people. Their beliefs weigh the decisions made by society [53]. Thus, there can be no sustainable development without including culture [41].

2.3. Disclosure of the Sustainability of Cooperatives

Cooperative organizations, like any organization, also need to legitimize themselves in the communities in which they operate [10,11]. They make decisions, act according to the four sustainability pillars, render accounts, and show transparency of these actions to their stakeholders, demonstrating that they create value [55]. This means that cooperative organizations must constantly seek to reduce information asymmetry, especially between

them and their primary stakeholders. To mitigate the asymmetry of information, it is essential that the information is material, and in this sense, materiality lies in disclosing information of interest to the primary stakeholders [4,7,56]. Primary stakeholders are those that can affect and be affected most directly by organizations; therefore, they should have their interests served as a priority [56–61]. Therefore, cooperative members and collaborators are considered primary stakeholders.

By providing information on sustainability, cooperative organizations would minimize information asymmetry and demonstrate stakeholders' appreciation. According to Arrow [1] and Stiglitz [2], information asymmetry exists in every contractual relationship and makes it impossible to complete contracts. Therefore, it also exists between cooperative organizations and their stakeholders. Asymmetry indicates that the information level is not the same between the contractual parties, and there is no possibility of perfect control from one party to the other [2,11]. However, organizations can manage this asymmetry to retain, delay, or disclose [2]. The results of this management may lead to greater or lesser exposure to adverse selection or moral hazard and the legitimization or not of organizations in the communities where they are located [1,2,11].

By establishing disclosure policies to reduce information asymmetry, cooperative organizations can minimize adverse selection and moral hazard possibilities [1,2]. Otherwise, stakeholders may choose between the following: not working with the cooperative and reducing the likelihood of adverse selection for the delivery and services of the product provided; or to continue working with the cooperative and run the risk of not having their interests met, being at the manager's mercy, with moral hazard [1,2,20,62].

However, if cooperative organizations hope to remain operating in the community where they work, legitimized by their stakeholders, they must demonstrate that they meet cooperative principles, values, and objectives [10,24,25,58,63]. This demonstration can be done by emphasizing the cooperative organizations sustainability [52,64], informing the stakeholders about their management behavior, through information considered material by them [4,7,56], leading them to legitimize the cooperative organizations [8,52,64,65].

There are several entities' initiatives for guiding the organizations' disclosure. Regarding sustainability, the following is prominent: GRI 102: General disclosures [66]; ETHOS indicators for sustainable and responsible businesses [67]; International standard of social accountability 8000 [68]; Guidance on corporate responsibility indicators in annual reports [69]. These initiatives were built based on listening to specialists and offer a general information perspective, which tries to embrace the stakeholders' demands. However, the diversity of informational stakeholders' interests requires that they be heard to identify the individual needs and enable the disclosure to contribute to the efficiency of the information policy established by the organization [52].

On the other hand, the studies about the revised sustainability disclosure used one of four distinct methodologies to establish the indicators used as disclosure references. The most used methodology is mainly in the annual and sustainability reports, published by the respective organizations [32,64,70–75] (to name a few more recent ones). Undoubtedly, organizations' reports are an essential source, as they allow stakeholders to litigate against organizations whenever conflicts of interest are established, given the information materiality. However, the reports are configured as a more restrictive communication channel than the electronic pages published on the Internet [9,11].

Other methodologies used by the reviewed studies to construct the indicators list were the empirical literature review in which the indicators used by some served as a basis for others [9,76–79]. Some authors used the guidelines established by the institutions that recommend information on sustainability to be disclosed [63,80–82]. Finally, the construction of the indicators list was identified based on consultations with specialists, with the aid of the Delphi technique and or with statistical and econometric tools [83,84].

However, it should be considered that both the empirical analyses in annual reports and empirical studies, institutional initiatives, and consultations with specialists start from an idealization about the interests demanded by the stakeholders in terms of information

on sustainability disclosure [11,65]. In other words, all these methodologies use references that are not configured in the stakeholders' manifestation since these were not questioned, ending up ignoring their expectations.

It is noteworthy that the diversity of stakeholders' interests requires that they be heard to identify the respective demands and enable the disclosure to contribute to the efficiency of the information policy established by the organization [21,52]. In this sense, only recently, the literature review makes it possible to identify the emergence of a fifth methodology, listening to stakeholders for the indicator's creation, but it is still insipient [11,52,85,86]. This situation can occur for three reasons: due to the difficulty in identifying the stakeholders who must first be affected by the disclosure [57,59–61]; due to the problem of listening to their interests [11,52,85,86]; or due to the complexity of the concept attributed to organizational sustainability [47].

However, to define indicators representative of information on sustainability, in addition to the stakeholders' perspective, it is necessary to consider their adherence to some principles: exact definition; manageable interpretation; applicability; measurability, comparability, relevance, clarity, and representation of reality reflecting the abstract concept to be analyzed [13–17]. The indicators contribute to the knowledge of truth through representation. They are tools for measuring and monitoring this reality [8,52,87]. Therefore, there is a need to listen to the stakeholders' interests in the process of creating the indicators. The indicators would represent information that establishes a legitimate relationship between the organization and its stakeholders [88,89], extending to cooperatives.

3. Methodological Procedures

The research was qualitative for building the list of sustainability indicators. Figure 1 shows the seven steps of collecting and analyzing evidence.

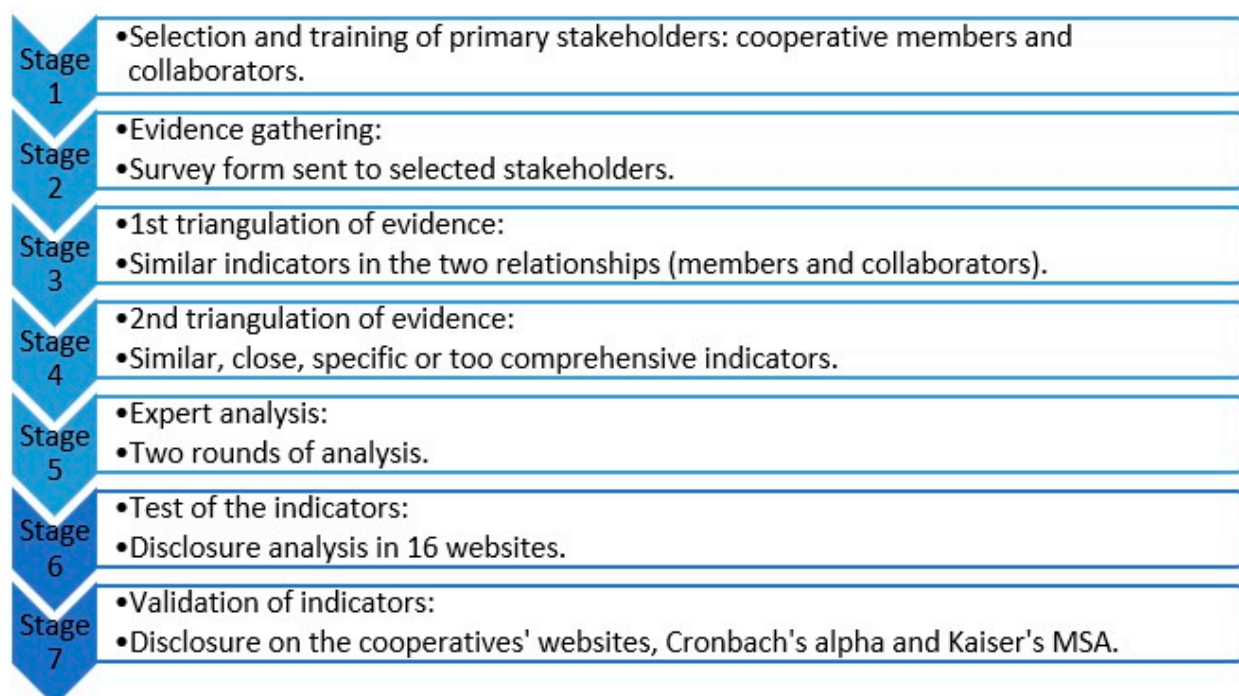


Figure 1. Surveying indicators stages.

For the research, Brazilian cooperatives were chosen for accessibility. In 2019, there were 5314 cooperatives, with around 15.5 million members and 430,000 collaborators working in seven branches of activity—agribusiness; consumption; credit; infrastructure; health; labor;

production of goods and services; and transportation [18]. Therefore, cooperatives have essential participation in the country's economy and contribute to economic development.

In the first research stage, the stakeholder's selection considered primary proceeded: member and collaborator, assuming the criterion of belonging to the OCB system [18]. There was training on sustainability for these stakeholders, with an average duration of 3 h. For the second stage, a form was created containing four sustainability pillars: economic, environmental, social, and cultural, which were sent to the two stakeholder groups to indicate which information they consider relevant for sustainability and should be disclosed on the cooperative organizations' internet pages. Stakeholders received the form directly, by email from the cooperatives they were linked to. In total, 110 responses returned, 58 from members and 51 from collaborators of cooperative organizations, which consisted of the survey sample in stakeholders' terms.

In the third stage, the indicators transcribe, creating two lists, one from the cooperative members' perspective and the other from the collaborators' perspective. Content analysis, looking for similar and/or with the same meaning words and phrases, eliminated identical or similar indicators from the responses of each group components, forming the two indicators lists. In the fourth research stage, the answers were triangulated, transforming the two lists into one. At this stage, the contents analysis carried out found identical or similar indicators between the two groups, resulting in 258 indicators in the four cooperative sustainability pillars.

At the fifth research stage, two experts analyzed the indicators list with the objective of reducing the indicators number, including all the information claimed by the stakeholders, keeping them clear and easy to interpret. This stage divides into two analysis rounds, with the Delphi technique application. In the first round, experts analyzed the indicators list separately, which resulted in a 92 indicators list. In the second round, experts analyzed and discussed the indicators list together to establish consensus. The stage results led to 61 sustainability indicators for cooperative organizations. Table 1 shows the results of each construction stages of the indicators list.

Table 1. Research stages summary.

Pillar	3rd Stage			4th Stage	5th Stage	
	Members	Collaborators	Total		1st	2nd
Economic	41	48	89	66	26	20
Social	41	44	85	71	26	18
Environmental	35	40	75	64	20	13
Cultural	34	30	64	57	20	10
Total	151	162	313	258	92	61

The sixth research stage consisted of testing the list of indicators and occurred by observing the sustainability indicators disclosure on 16 cooperatives' websites, different from the selected sample. It was found that the indicators represented the cooperative organizations' reality and the main sustainability information, which enabled measurement and monitoring and, therefore, are suitable to be considered as a final list [8,13–17,87]. Finally, in the seventh research stage, the indicators list was validated, observing their disclosure or not on the cooperative organizations' websites. The cooperative organizations' choice [18] followed a simple non-stratified random order [19], as shown in Table 2.

Table 2. Cooperative types observed.

Cooperative Types	Universe	Sample
Agribusiness	1.223	44
Consumption	263	0
Credit	827	24
Infrastructure	265	4
Health	783	12
Work, production of goods and services	860	5
Transport	1.093	2
Total	5.314	91

The calculated sample consisted of 98 cooperative organizations, considering a 90% reliability degree. Cooperatives were randomly selected; however, in seven of them, no website was found. Thus, the final sample consisted of 91 cooperative organizations from different activity branches. For the disclosed indicator, a value of one and a zero value for the undisclosed indicator were assigned. This step allowed us to quantify and rank the indicators evidenced by the cooperatives. It also allowed us to calculate Cronbach's Alpha to demonstrate the internal consistency of the indicators and Kaiser's measure of sampling adequacy as shown in the research results.

4. Research Results

The research results presentation and discussion divide into the indicators survey stages and the indicators disclosure analysis on the cooperative organizations' websites.

4.1. Survey of Sustainability Indicators

After selecting, the primary stakeholders—members and collaborators—were trained on organizations sustainability, configuring the first research stage, the evidence collected, was the second research stage. The form was submitted to primary stakeholders and answered by 110, comprising 58 members and 52 employees from different Brazilian cooperatives.

In the third research stage, the indicators considered essential by the stakeholders were transcribed, creating two lists: one based on the cooperative members and the other based on the cooperative collaborators' responses. The content analysis eliminated the same or similar indicators from the same group members' responses. This stage resulted in 151 and 162 sustainability indicators considered essential by the cooperative members and collaborators.

For the fourth stage, content analysis was carried out by triangulating the indicators obtained in the two initial lists, transforming them into just one. For this, common or similar indicators were eliminated. This step reduced the list to 258 cooperative sustainability indicators. In the fifth stage, two disclosure specialists analyzed the indicators list. In the first round, these experts analyzed whether the indicators were sustainability representative and adhered to the principles of exact definition, manageable interpretation, applicability, measurability, comparability, relevance, clarity, representation of reality, and reflection of the abstract concept being analyzed [13–17]. They were also consulted on whether the indicators contributed to the cooperative's reality knowledge and whether they served as tools for measuring and monitoring this reality [8,52,87]. These analyses reduced the list to 92 indicators.

In the second analysis round, the experts acted together, exploring each indicator, seeking consensus, and meeting the proposed requirements [8,13–17,52,87]. In this way, the indicators became more comprehensive due to the interpretation that they would adequately express reality and facilitate measurement and monitoring. This stage resulted in a 61 indicators list. The disclosure test was carried out on 16 cooperative organizations' websites, not sample components. This stage demonstrated that the list met the stakeholders' expectations, covered all sustainability pillars, and represented the cooperative's reality, giving indicators list reliability. The indicators constructed are in Tables 3–6.

Table 3. Economic indicators disclosure.

Pillar	Indicator from the Primary Stakeholders' Perspective	Cooperative Disclosure	% Disclosed
Economic	Financial Statements: Balance sheet and income statement	61	67.03%
	Investments	58	63.74%
	Audit report	56	61.54%
	Loans and financing	53	58.24%
	Cash flow	52	57.14%
	Economic and financial performance indicators	52	57.14%
	Member benefits/Participation in surplus	51	56.04%
	Management report	51	56.04%
	Supervisory board report	41	45.05%
	Collaborator benefits/participation in surplus	32	35.16%
	Strategic planning	30	32.97%
	Fines and litigation	19	20.88%
	Payroll	17	18.68%
	Compliant/Defaulting members	16	17.58%
	Management remuneration	15	16.48%
	Directors' remuneration	14	15.38%
	Member's turnover	12	13.19%
	Collaborator's turnover	10	10.99%
	Budget (realized x budgeted)	7	7.69%
	Job and salary plan	2	2.20%

Table 4. Social indicators disclosure.

Pillar	Indicator from the Primary Stakeholders' Perspective	Cooperative Disclosure	% Disclosed
Social	Actions and social campaigns of the cooperative	70	76.92%
	Members' number	70	76.92%
	Social projects	68	74.73%
	Continuing education program	63	69.23%
	Cooperative principles	60	65.93%
	Collaborators' number	59	64.84%
	Cooperative governance structure	51	56.04%
	Integration programs (field day; women; etc.)	48	52.75%
	Social programs (Union makes life, table Brazil; etc.)	46	50.55%
	Ethics and conduct code	46	50.55%
	Bylaws	44	48.35%
	Technical assistance	40	43.96%
	Social report	40	43.96%
	Continuing education for members	35	38.46%
	Social performance indexes	28	30.77%
	FATES social resources	27	29.67%
	Members benefit plan	26	28.57%
	Collaborators benefit plan	15	16.48%

Table 5. Environmental indicators disclosure.

Pillar	Indicator from the Primary Stakeholders' Perspective	Cooperative Disclosure	% Disclosed
Environmental	Environmental education and awareness campaigns	57	62.64%
	Environmental sustainability policies	49	53.85%
	Incentivize conscious consumption campaign	38	41.76%
	Technology for sustainability	37	40.66%
	Natural resources consumption	36	39.56%
	Environmental preservation project	35	38.46%
	Sustainability report	31	34.07%
	Recycling and waste treatment program	29	31.87%
	Pollutants reduction	23	25.27%
	Environmental permits	18	19.78%
	Environmental legislation	14	15.38%
	Environmental investments return	9	9.89%
	Environmental fines and litigation	2	2.20%

Table 6. Cultural indicators disclosure.

Pillar	Indicator from the Primary Stakeholders' Perspective	Cooperative Disclosure	% Disclosed
Cultural	Cooperative history	87	95.60%
	Cooperative mission, vision, principles, and values	82	90.11%
	Cultural actions developed by the cooperative	61	67.03%
	Sponsorship of actions /activities in local and regional culture	55	60.44%
	Encouraging local and regional culture	51	56.04%
	Awards and certifications	50	54.95%
	Events to strengthen cooperative identity	43	47.25%
	Cooperative education program	32	35.16%
	Library (physical or virtual) on cooperatives'	3	3.30%
	Policies for hiring children (relatives) of members	2	2.20%

4.2. Disclosure of Sustainability Indicators

The analysis of the sustainability disclosure was carried out on the 91 cooperative organizations' websites constituting the sample. Tables 3–6 show the sustainability pillar and the cooperative organizations' number that disclosed each indicator. Table 3 shows the economic indicators.

Among the stakeholders' interest indicators, many are in line with the revised literature. However, indicators such as compliant/defaulting members, cash flow, payroll, fines, and litigation, budget, job, and salary plan, supervisory board report, management, and directors' remuneration and member's turnover are stakeholders' specific interests and not previously identified [32,64,66,67,69–71,77,90].

When analyzing the cooperatives' disclosure about the economic pillar, it is observed that, coincidentally, the indicators not identified in the literature review are the least disclosed in the clear majority. The highlight is the "job and salary plan", disclosed by only two cooperatives. It is noteworthy that the economic and financial information disclosure has been considered relevant since the 1970s [39,44] and is included in the information disclosure analysis by organizations [90] (to cite an example). In addition, meeting the stakeholder's interests contributes to the cooperative organization's legitimacy [10,11,52,64].

The primary stakeholders consulted for this survey indicated the economic information they want to be informed about. Therefore, the asymmetry of economic information [1,2] arising from a weak disclosure policy points to the possibility of weakening trust in managers' decisions regarding the sustainability of the respective cooperative organization.

It can also raise doubts about the existence of conflicts of interest [4] between managers and primary stakeholders. This means that, in the absence of information, the cooperative member may think that the remuneration of directors is excessive or, even, that the turnover of members is very high, which, for example, would lead them to question the legitimacy [10,11] of their management Table 4.

Some social indicators are specific to cooperatives, such as actions and social campaigns of the cooperative; technical assistance provided to members; continuing education for members; members benefit plan, cooperative principles, and FATES social resources [24,25,27,34,35].

Although not previously identified [32,64,66–71,90], these indicators were more widely disclosed by cooperative organizations, which is what demonstrates the interest in disseminating their social commitment, one of its founding cooperative organizations' principles [24,25,27]. This disclosure meets the primary stakeholders' interests, reducing information asymmetry and facilitating its legitimization process [2,10,11].

Disseminating information representative of the cooperative's social responsibility refers to the possibility of showing its link with the environment in which it operates [11,23,52]. On the other hand, the asymmetry regarding this category of information may signal a detachment of the cooperative organization from the society in which it is inserted [2,10,11].

Table 5 shows the environmental indicators of interest of the cooperative organizations' primary stakeholders.

Most environmental indicators of primary stakeholders' interest are consistent with the reviewed literature [13,74,78,80,82,83,91]. However, the environmental fines and litigation indicator found in other surveys also considered the stakeholder's interests [11,52].

The indicator disclosure observes that the one found only in the literature that considers the stakeholders' interests is the least disclosed by the cooperative organizations surveyed. The second least disclosed indicator is environmental investment return, an essential indicator for stakeholders for assessing the cooperative organizations' environmental performance. It also notes that the indicators on legislation and environmental permits are poorly disclosed. Stakeholders show an interest in understanding the environmental issues cooperatives that are related more profoundly, which has not been addressed. This can lead to problems for the cooperatives legitimization since the disclosure lack can generate adverse interpretations [11,32,71,92], mainly for the cooperatives from the agribusiness sector that work with agricultural inputs that can be harmful to the environment [32,33].

Interest in environmental information is evidenced by the indicators proposed by the surveyed stakeholders. On the other hand, a policy on the disclosure of these indicators on the websites does not seem to be a concern for the managers of the cooperatives. This leads to the inference that the analyzed cooperatives would find their legitimacy vis-à-vis stakeholders weakened in terms of environmental information [11,52,92].

Table 6 shows the cultural indicators of interest of the cooperative organizations' primary stakeholders.

When analyzing the cultural pillar disclosure, it is possible to see differentiated and specific indicators for the cooperatives. Many consider other organization types within the social pillar [9,11,65–67,70,87]. Still, others are considered essential in the revised literature on the organizations' culture [22,40,41]. However, none of them have been specifically assessed within the cooperative organizations' sustainability cultural pillar.

It is noteworthy that despite this pillar being the most disclosed, on average, by cooperative organizations, some indicators are practically ignored, such as the policies for hiring children (relatives) of members and a library on cooperatives. The latter indicator is crucial, as it demonstrates the primary stakeholders' interest in getting to know the cooperative system from the cooperatives themselves. Significantly, cooperative education is fundamental for the dissemination of its basic principles and values, ensuring system continuity in future generations [22,39,40,43,53,54].

The culture of the cooperative organization establishes its own identity. Therefore, the decision of managers to invest in the maintenance of the cooperative culture becomes a necessary condition for its continuity [22,53,54]. Information asymmetry on these indicators refers to the possibility of the member's contract breaking with the cooperative. In other words, the lack of elements of social identification with the cooperative may lead the member to find no sense in maintaining the relationship with it.

Complementarily, also to validate the identified indicators, the results of Cronbach's Alpha and Kaiser's sample adequacy measure are presented in Table 7.

Table 7. Cronbach's Alpha and Kaiser's MSA.

Pillar	Cronbach's Alpha	Kaiser's MSA
Economic	0.902	0.810
Social	0.856	0.772
Environmental	0.859	0.783
Cultural	0.776	0.715
General Sustainability	0.938	0.745

Cronbach's Alpha is a measure of the internal consistency of indicators and a sample reliability estimator [93–95]. The measure of adequacy of the Kaiser sample, on the other hand, assesses whether the indicators that make up each sustainability pillar are adequate in that grouping [96,97]. For Cronbach's Alpha, the minimum acceptable level is 0.7, while for

Kaiser's MSA, the minimum acceptable level is 0.6 [95,98]. Furthermore, the two measures result in indicating the same direction, as they must be directly related [94,96]. Therefore, considering the results presented, both measures confirm the validity and reliability of the indicators grouped in the economic, social, environmental and cultural pillars and for sustainability.

In summary, it was observed that in the economic pillar, the financial statements were disclosed by 61, representing 67.03% of the cooperative organizations. In the social pillar, the cooperative's social actions and campaigns and the members' number were disclosed by 70, representing 76.92% of the cooperative organizations. The most disclosed indicator was environmental education and awareness campaigns in the environmental pillar, for 57, representing 62.64% of cooperative organizations. The cooperative history indicator was the most disclosed among all the analyzed indicators in the cultural pillar, for 87, representing 95.60% of the cooperative organizations. Therefore, these were the most widely attended in the primary stakeholders' interests, presenting the lowest information asymmetry.

On the contrary, the economic pillar's job and salary plan indicators, environmental fines and litigation from the environmental pillar, and policies for hiring associates from the cultural pillar disclose by only two cooperatives. Only 2.20% of cooperative organizations show this information of interest to their primary stakeholders on their websites. Such a low percentage is so that disclosure can be considered a strategy to legitimize cooperatives with their primary stakeholders [5,52,63,64,71]. Cooperative organizations must consider that these two stakeholders—members and collaborators—are the most directly related to them, being able to affect them and be affected by them in a significant way by the roles they assume, as owners and workers.

The indicators representing information on sustainability constructed in this research show which information is valued and desired by primary stakeholders and, therefore, material for mitigating information asymmetry [4,7,56]. In addition, they show a significant gap between the expectations of the primary stakeholders and the disclosure policy established by the managers of the analyzed cooperatives. Thus, if cooperative organizations' information asymmetry weakens their managers' legitimacy, it is understood that new disclosure policies must be implemented. Disclosure policies are established based on stakeholders' expectations, not just the information recommended by external control bodies.

5. Final Considerations

The present study objective was to identify indicators of representative information on sustainability from the cooperative organizations' primary stakeholders' perspective to mitigate information asymmetry. The disclosure analysis of the 61 indicators constructed should note that the disclosure policies are more focused on mitigating the information asymmetry on the pillars: cultural and social, with the environmental and economic being neglected.

The research also shows a gap between the disclosure policy established by cooperatives and the demand for information representative of sustainability demanded and with materiality for the primary stakeholders. This is to say that managers of cooperative organizations that aim to legitimize themselves need to better know the information demands of their stakeholders.

When a member fails to deliver its product or use the cooperative's services, establishing a contract with another organization may reflect the knowledge lack about that cooperative organization in which it would be linked. If the members do not have enough information and deliver their products or use the cooperative organizations' services, they may be making an adverse selection to the cooperative organization's interests. The information asymmetry does not enable the cooperative member to identify the value in terms of the cooperative organization's sustainability and, therefore, does not legitimize it in the environment in which it operates.

Additionally, information asymmetry can affect the cooperative member's confidence in the managers of the respective cooperative organizations, as they do not have enough information to identify that the managers are acting according to their interests. If the primary stakeholders do not have enough information about the cooperative organization's performance, managers can exploit this information asymmetry to benefit, which gives rise to the moral risk problem. In this sense, by being more transparent, cooperative organizations reduce information asymmetry and, consequently, the possibility of adverse selection and moral risk, increasing the confidence of both members and collaborators, primary stakeholders, and legitimizing cooperative organizations. It is worth recalling that this research made it possible to infer that economic indicators are neglected.

The policy of disclosing information on cooperative organizations' sustainability presents weaknesses, which enables one to understand the need for managers qualification who aim to legitimize themselves with primary stakeholders and improve the reputation of these organizations. However, it is essential to emphasize that the research carried out has limitations in sample terms. The evidence obtained does not represent all cooperative's reality or all stakeholders' expectations about disclosure, which incites future research.

However, it is noteworthy that the research contributes to the cooperative organizations themselves by presenting them with a representative sustainability information indicators list to mitigate information asymmetry with their primary stakeholders, establishing strategic disclosure policies. It also contributes to regulatory and supervisory bodies that would use the indicators list to establish disclosure standards and monitor sustainability. These indicators are of primary stakeholders' interest and are considered for the cooperative organizations' legitimization in the communities they operate.

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