

Methodological Validation of the Cooperative Social Responsibility Measurement Instrument

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Abstract

This research is part of the project "Corporate Social Responsibility in Ecuadorian savings and credit cooperatives. A multi-case analysis and proposal for the development of a cooperative education program" and examines the synergy between cooperative principles, the Sustainable Development Goals (SDGs) and the dimensions proposed for a Cooperative Social Responsibility (CSR) measurement model in Ecuador. It explores how these dimensions converge to promote ethical, sustainable and socially responsible practices, aligned with current regulatory compliance. CSR has become increasingly important in cooperatives, becoming a fundamental practice that encompasses cooperative governance, economic, social, environmental, ethical and technological dimensions. This study describes the methodological process for the validation of a CSR instrument in cooperatives, reviewed and validated by experts from Spain, Ecuador, Guatemala, Argentina and Cuba, using the Delphi method to reach a consensus on the relevance and clarity of the questionnaire items. This process ensures that the instrument is suitable for assessing CSR practices in credit unions, providing a reliable tool for the continuous improvement of their operations.

Keywords: Social dimension, environmental dimension, economic dimension, ethical dimension, technological dimension, corporate governance, Delphi method.

1. Introduction

Corporate Social Responsibility (CSR) has established itself as an essential component in the management of contemporary organizations, especially in the cooperative sector. This study focuses on the intersection of cooperative principles, the Sustainable Development Goals (SDGs) and the specific dimensions that make up a Cooperative Social Responsibility (CSR) measurement model in Ecuador, according to the historical and evolutionary characteristics of

the sector in the country (Fernández & Galarza, 2023). Cooperatives, because of their democratic nature and their focus on sustainability and community well-being, are in a unique position to lead CSR initiatives that promote ethical, sustainable and socially responsible practices.

In the Ecuadorian context, the integration of CSR in cooperatives not only responds to a growing demand from society and regulators, but also represents an opportunity to reinforce their mission and core values. Credit unions, in particular, face the challenge of balancing their economic performance with meeting social and environmental goals, in line with the SDGs set by the United Nations.

Cooperativism, conceived as a global socioeconomic movement, encourages the association of individuals to build companies where members have equal rights and benefits according to their contribution to work (Fernández, 2006). According to the International Cooperative Alliance (ICA), cooperatives are autonomous associations of people who, on a voluntary basis, come together to meet common needs in search of the mutual and equitable benefit of their members, differentiating themselves by their democratic and participatory structure.

Corporate Social Responsibility (CSR) is a multifaceted concept that has been developed and refined over time, reflecting an evolution in the perception of corporate responsibility in society. Howard Rothmann Bowen (1953) suggested that entrepreneurs have an obligation to adopt policies and decisions in line with society's goals and values, establishing an ethical basis for entrepreneurial action. In contrast, Milton Friedman (1970) argued that the only responsibility of companies is to generate profits for shareholders, relegating social and ethical considerations to the background (Palacios Flórez, 2020). The modern understanding of CSR, proposed by Carroll (1979), includes economic, legal, ethical, and discretionary expectations that society has of organizations, suggesting that companies should not only comply with laws and generate profits, but also act ethically and contribute to social welfare in general.

This study is part of the research project entitled: "Corporate Social Responsibility in Ecuadorian savings and credit cooperatives. A multi-case analysis and proposal for the development of a cooperative education program". This project seeks to deepen the integration of CSR in Ecuadorian cooperatives and develop educational programs that strengthen these practices. The results of this research will be disseminated to supervised entities to promote the implementation of CSR practices that contribute to sustainable development and the well-being of communities.

This article describes in detail the methodological process used for the validation of a CSR measurement instrument in cooperatives. This instrument has been developed and refined through a rigorous review and validation process by renowned experts in the field of CSR, from Spain, Ecuador, Guatemala, Argentina and Cuba. Using the Delphi method, it was possible to reach a consensus on the relevance and clarity of the questionnaire items, thus ensuring their relevance and effectiveness.

The validation of this instrument is relevant, as it provides credit unions with a robust and reliable tool to continuously evaluate and improve their CSR practices. This not only ensures current regulatory compliance, but also strengthens the capacity of these organizations to contribute to the sustainable development and well-being of their communities. Ultimately, this study

contributes to the field of CSR, providing a solid and validated methodology that can be replicated and adapted in various cooperative contexts at the international level.

This work consists first of the introduction where the research is justified and the objectives are proposed. A second section deals with the methodology applied in the study. In a third part, the results achieved and the presentation of the instrument are described. Finally, the conclusions and research proposals are described.

2. Methodology

The focus of this research is qualitative, focused on the construction and validation of a questionnaire to measure Corporate Social Responsibility (CSR) in Ecuadorian savings and credit cooperatives. The methodology was designed to ensure the comprehensiveness and relevance of the questionnaire, covering all critical areas of cooperative social responsibility.

2.1 Literature review of CSR

The first step in the methodology consisted of an exhaustive literature review on Corporate Social Responsibility (CSR). This analysis encompassed the collection and study of key definitions, relevant theories and approaches existing in the literature, allowing the identification of the fundamental concepts and theoretical models that underpin the practice of CSR.

The literature review focused on identifying international CSR models and standards, as well as previous studies on the integration of CSR in cooperatives. Among the revised models are ISO 26000, the Global Reporting Initiative (GRI) and the AA 1000 standard, which provide guidelines and frameworks for the implementation and evaluation of social responsibility practices in organizations. This analysis provided a robust framework for the development of the questionnaire.

2.2 Analysis of cooperative principles and their alignment with the SDGs

A detailed analysis of the cooperative principles was then conducted, assessing how these principles align with the Sustainable Development Goals (SDGs). This analysis helped to identify areas of convergence and synergies between cooperative principles and the SDGs, which is relevant to understanding how cooperatives can integrate these objectives into their CSR practices.

2.3 Analysis of the relationship between CSR dimensions, cooperative principles and the SDGs

The next step was to examine the relationship between CSR dimensions and cooperative principles, as well as their correspondence with the SDGs. This analysis made it possible to map how the dimensions of CSR interrelate with cooperative principles and the SDGs, facilitating a comprehensive understanding of social responsibility in the cooperative context.

2.4 Identification of the main CSR study trends

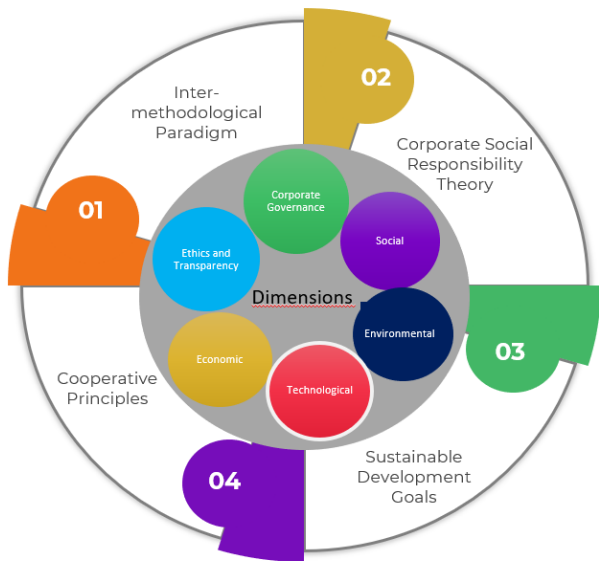
The main trends of study in the field of CSR were identified, with special attention to the growing technological dimension in the modern literature. This step involved reviewing recent research

to understand how new technologies are influencing CSR and how these trends should be considered in the questionnaire.

2.5 Defining the dimensions of the study

Based on the literature review and the analysis carried out, the specific dimensions to be used in the study were defined, which are shown in Figure 1.

Figure 1. Study dimensions



D1: Cooperative Governance Dimension: Evaluate the effectiveness and transparency in the governance of the cooperative, ensuring the participation of members and alignment with cooperative principles.

D2: Social Dimension: Measure the social impact of the cooperative on its members and the community, ensuring the satisfaction of basic needs and the promotion of fair and equitable labor relations.

D3: Environmental Dimension: Evaluate the sustainable practices and environmental commitment of the cooperative, promoting transparency and the adoption of measures for the conservation of the environment.

D4: Economic Dimension: Analyse economic sustainability and equity in the distribution of profits, ensuring the transparency and financial autonomy of the cooperative.

D5: Ethical Dimension and Transparency: Evaluate ethics and transparency in the operations of the cooperative, fostering ethical relationships and the implementation of mechanisms for accountability.

D6 Technological Dimension: Evaluate the use of advanced and sustainable technologies in the cooperative's operations, ensuring their adoption for the improvement of sustainability and transparency.

2.6 Questionnaire construction

The questionnaire was built, which went through 14 iterations until the final version was defined, which was subsequently subjected to a rigorous internal and external validation process. Each question was meticulously designed to capture detailed information on the defined dimensions and assess how CSR practices are implemented in Ecuadorian credit unions in segments 1 and 2. This approach ensured that the questionnaire was comprehensive and relevant, covering all critical areas of cooperative social responsibility and providing an accurate and reliable tool for its evaluation.

2.7 Internal validation of the instrument

The questionnaire was subjected to an internal validation carried out by the research team, with the valuable participation of the academic staff of the University of the Armed Forces - ESPE, who are expert members of the research project mentioned above. This process included a critical and thorough review of the content of the questionnaire, assessing the clarity of the questions and the relevance of the dimensions addressed. The aim of this review was to ensure that the questionnaire was coherent, accurate and adequate to effectively assess CSR practices in cooperatives. Internal validation ensured that each item was relevant and understandable, contributing to the reliability and validity of the instrument before its implementation in the external validation phase.

2.8 External validation of the instrument

Subsequently, the questionnaire was subjected to external validation by international and national evaluators from Spain, Argentina, Guatemala, Cuba and Ecuador. The evaluators included CSR experts, academics, cooperative managers and professionals with vast experience in corporate social responsibility. This validation sought to guarantee the applicability and quality of the questionnaire in various cultural and professional contexts. Table 1 briefly presents the profiles of the experts consulted.

Table 1. Expert Profile

Country	Profile
Spain	An expert in sustainable development and CSR with experience in academia and consulting.
Ecuador	Two professionals with experience in the implementation of CSR practices in local cooperatives and mass consumption companies.
Guatemala	A professional specialized in cooperative studies and social responsibility.
Argentina	A researcher in social and solidarity economy, expert in social and environmental impact assessment.
Cuba	Two professionals in cooperative management, cooperative education and environmental sustainability.

2.9 Validation process

The scale used for the validation of the CSR instrument was based on four categories: sufficiency, clarity, coherence and relevance. The experts rated each item using a scale of 1 to 4,

with 1 indicating that the item does not meet the criteria and 4 indicating that the item fully meets the criteria.

Each expert reviewed the questionnaire in detail, providing feedback and suggestions to improve its accuracy and relevance. This process allowed to identify and correct possible weaknesses in the design of the questionnaire, ensuring that all questions were clear, coherent and appropriate to assess CSR practices in different cooperatives.

External validation not only reinforced the robustness of the questionnaire, but also ensured its adaptability to diverse cultural and professional environments, making the instrument an effective and reliable tool for the evaluation of social responsibility in credit unions.

2.10 Adjustments to the questionnaire proposal and qualitative analysis of the instrument

Based on the comments and recommendations obtained during the external validation, adjustments were made to the proposed questionnaire. These adjustments allowed the instrument to be refined and optimized, improving its efficiency and accuracy.

2.11 Socialization and approval by the Regulatory Fiscal Entity

Finally, within the framework of the inter-institutional cooperation agreement between the Superintendence of Popular and Solidarity Economy and the University of the Armed Forces - ESPE, a final phase of socialization and approval of the questionnaire was included. This stage, an integral part of the research project, was designed to ensure that the questionnaire complies with all regulatory requirements and is aligned with the standards and expectations of the control body.

During this phase, the questionnaire was submitted to the Superintendence of Popular and Solidarity Economy of Ecuador for review and formal approval. This socialization process allowed the incorporation of comments and suggestions from the regulatory body, ensuring that the instrument not only complied with academic and research standards, but was also applicable and relevant in the current regulatory context.

Socialization with the public watchdog ensures that the questionnaire is aligned with national policies for the supervision and control of credit unions, promoting its acceptance and effective use within the sector. This final validation provides a scientific and regulatory endorsement to the questionnaire, confirming its validity and usefulness as a tool to evaluate Corporate Social Responsibility practices in Ecuadorian cooperatives.

3. Results

3.1 Theoretical contributions on Corporate Social Responsibility (CSR)

Corporate Social Responsibility (CSR) has become a relevant element in the management of organizations around the world, including credit unions. The literature review carried out in this research provides a robust theoretical framework for the development of the CSR questionnaire, ensuring that it includes the most relevant and up-to-date elements of CSR theory and practice.

Corporate Social Responsibility (CSR) has been the subject of study and debate for decades, resulting in multiple definitions and theoretical approaches that reflect its evolution and the diversity of perspectives on the role of companies in society (Carrillo & Galarza, 2022). The literature review also covered the main definitions and theories of CSR. The definition of CSR has evolved over time, moving from a focus on corporate philanthropy to a broader understanding that includes integrating social and environmental concerns into business operations and stakeholder interactions, in an integrated and systemic way (Fernández & Rivera, 2016). Table 2 presents a synthesis of the most relevant contributions of various authors and entities on the concept of CSR.

Table 2. Theoretical contributions

Authors	Definition
Bowen (1953)	The entrepreneur must adopt policies and decisions in line with the objectives and values of society.
Davis (1960)	CSR must be in line with the social power of the company and applied in business decisions.
Friedman (1970)	The only responsibility of companies is to generate profits for shareholders.
Carroll (1979)	CSR includes economic, legal, ethical and discretionary expectations of society.
Freeman (1984)	CSR includes stakeholder relationship management.
World Business Council for Sustainable Development	CSR is the continuous commitment of companies to contribute to economic development and improve the quality of life.
European Commission (2001)	CSR integrates social and environmental concerns into business operations on a voluntary basis.
De la Cuesta & Martínez (2003)	Legal and ethical obligations and commitments to stakeholders, derived from organizational impacts.
Aguilar (2008)	CSR comprises voluntary initiatives that go beyond legal requirements, encompassing economic, social and environmental elements.
García (2008)	CSR implies conduct that respects legality, ethics, morals and the environment by companies.
Brown Grossman (2010)	Companies must generate wealth and also assume responsibilities beyond legal obligations.
ISO 26000 (2010)	CSR is the responsibility of an organization in the face of the social and environmental impacts of its decisions and activities.
Porter & Kramer (2011)	CSR involves creating economic and social value, addressing social needs and challenges.
Díaz de la Cruz & Fernández (2016)	The mission and vision must reflect the business purposes and the position with respect to the stakeholders.
Ramírez et al. (2017)	CSR is the business response to the need for sustainable development, protecting the environment and communities.
Quintero-Arango (2017)	The logic of CSR is to be consistent with business activities and their impact.

3.2 CSR models and standards

One of the main components of the literature review is the identification and analysis of the most internationally recognized CSR models and standards. Among these are:

- ISO 26000: This standard provides guidelines on social responsibility and is designed to be used by organizations of all sectors and sizes. ISO 26000 addresses issues such as organizational governance, human rights, labor practices, the environment, fair operating practices, consumer affairs, and community development (Castka & Balzarova, 2008). The inclusion of these topics in the questionnaire ensures that the CSR practices evaluated are comprehensive and comprehensive.
- Global Reporting Initiative (GRI): Offers one of the most widely used frameworks for sustainability reporting, helping organizations communicate their impact on economic, environmental, and social aspects (Brown et al., 2009). The GRI guidelines have been instrumental in structuring the questionnaire, providing a framework for assessing transparency and accountability in cooperative CSR practices.
- AA 1000: This standard focuses on the principles of inclusiveness, materiality, and responsiveness, and is used to ensure that organizations consider and respond to the concerns of their stakeholders (Zadek et al., 1997). The inclusion of these principles in the questionnaire ensures that the CSR practices assessed are relevant and respond to the expectations of cooperative members and other stakeholders.

3.3 Typology of CSR theories according to Garriga and Melé (2004)

Garriga & Melé (2004) classified CSR theories into four main categories, based on the interaction between business and society and focusing on economic, political, social, and ethical aspects. Table 3 presents a brief description of each category and its central conceptual elements, along with some of the most prominent authors.

Table 3. CSR theories of Garriga & Melé (2004)

Type of Theory	Description	Core Elements	Featured Authors
Instrumental	CSR as a means to obtain profits.	CSR is a strategy to achieve economic objectives, considering the interests of stakeholders only if they contribute to maximizing value for shareholders.	Friedman (1970), Jensen & Meckling (1976), Porter & Kramer (2002), McWilliams & Siegel (2001).
Politics	CSR derives from the social power of companies.	Companies must use their social power responsibly, according to the "Iron Law of Responsibility".	Davis (1960, 1967), Donaldson & Dunfee (1994, 1999), Matten et al. (2003), Wood & Logsdon (2002).
Integrative	Response to stakeholder demands.	Companies incorporate stakeholder demands as voluntary constraints, without questioning the maximization of profitability.	Ackerman (1973), Sethi (1975), Wartick & Rude (1986), Jones (1980), Preston & Post (1975, 1981).
Ethics	Ethical obligation of the company.	The relationship between business and society is imbued with moral values. Social responsibility is seen as an ethical duty.	Donaldson (1982), Carroll (1979, 1991, 1994), Schwartz and Carroll (2003), Freeman (1984).

Note: Adapted from Garriga & Melé (2004).

3.4 CSR practices

Corporate Social Responsibility (CSR) has evolved as an indispensable component in the management of organizations, covering economic, social and environmental aspects to promote sustainable and ethical development. Below are several recent studies that explore the dimensions and practices of CSR in different organizational contexts.

CSR dimensions

In an article published in the *Journal of Business Ethics*, a comprehensive review of CSR implementation is conducted. This study identifies four dimensions of CSR implementation: CSR awareness, CSR communication, CSR integration, and CSR evaluation. The research highlights the importance of these components to ensure that CSR practices are effective and sustainable. In addition, it suggests that a successful implementation of CSR requires deep organizational commitment, continuous communication with stakeholders, and a robust system for evaluating and improving CSR initiatives (Maon et al., 2023).

CSR in industry and emerging markets

Another study published in *ScienceDirect* explores the relationship between CSR, industry concentration, and the performance of firms in emerging markets. The study finds that CSR practices vary according to industry concentration and that these practices can influence the financial and social performance of companies. This analysis highlights the importance of considering the industrial and regional context when evaluating CSR initiatives (Zhang et al., 2022).

Technology and CSR

Potocan (2021) examines the importance of technologies in the advancement of CSR in modern organizations. This study analyzes the shift from traditional technology development to sustainable technology development. It is highlighted that the integration of sustainable technologies can extend the triple bottom line model of CSR, improving the operations and sustainable behavior of organizations. The study suggests that emerging technologies, such as Industry 4.0 and the Industrial Internet, are redefining the relationship between technological development and social problems (Potocan, 2021; Carrillo et al., 2023).

Another study published in *Emerald Insight* introduces a new index based on the Sustainable Development Goals (SDGs) to measure CSR in Fortune 500 companies. This index provides granular data on CSR performance, allowing for more specific and detailed research questions. The methodological robustness of using the SDGs as a theoretical framework for pooling and analysing CSR data is highlighted (Kim & Li, 2023).

Therefore, it can be deduced that the integration of advanced technologies in CSR practices can transform the way credit unions operate and contribute to sustainable development. Implementing these technologies will not only improve efficiency and transparency, but will also strengthen the positive impact of cooperatives in their communities. With these proposals, cooperatives can maximize their contribution to sustainable development and the well-being of

their communities, aligning with the Sustainable Development Goals (SDGs) and cooperative principles.

CSR in cooperatives

The specific literature on CSR in cooperatives is less abundant than in other types of organizations, but there are studies that highlight the importance of CSR in this sector. Cooperatives, by their nature, have a strong commitment to community and sustainability, which is reflected in their CSR practices. Spear (2004) in his study on governance in cooperative organizations argues that cooperatives have an inherent advantage in the implementation of CSR practices due to their democratic structure and focus on the well-being of members and the community. This study provides a solid basis for including items in the questionnaire that assess governance and member participation in CSR decisions.

Birchall & Ketilson (2009) in their research on the resilience of cooperatives during economic crises find that cooperatives that integrate CSR into their strategy are more resilient and able to maintain employment and services to their members. This finding underscores the importance of including CSR dimensions that assess economic sustainability and crisis response capacity.

Jones & Kalmi (2012) in their study on economies of scale and participation in cooperatives highlights the importance of CSR in creating long-term value for members and the community. This approach has been incorporated into the questionnaire to assess how CSR practices contribute to the social and economic value created by cooperatives.

Synergy between Cooperative Principles, SDGs and CSR dimensions

The synergy between cooperative principles, the Sustainable Development Goals (SDGs) and the Corporate Social Responsibility (CSR) dimensions represents a comprehensive approach to fostering sustainability and inclusive development in organizations. Cooperative principles, such as democratic governance and member participation, align closely with the SDGs, particularly those related to reducing inequalities and fostering sustainable communities (United Nations, 2015). These principles promote a business model that seeks economic success along with social and environmental well-being, facilitating the implementation of practices that contribute to the SDGs.

Relationship between Cooperative Principles and SDGs

The synergy between cooperative principles and the SDGs is essential to align the strategic objectives of cooperatives with global sustainability goals. Table 4 presents this relationship that shows how cooperative principles support various sustainable development goals, promoting inclusive and sustainable practices within cooperatives.

Table 4. Cooperative Principles and SDGs

Cooperative Principles	ODS
Q1: Open and Voluntary Membership	#1, #5, #8, #10
P2: Democratic control of members	#1, #5, #8, #10
P3: Members' financial participation	#1, #8, #10
P4: Autonomy and independence	#1, #8, #10
P5: Education, training and information	#1, #4, #8

P6: Cooperation between cooperatives	#1, #8, #17
P7: Community Engagement	#1, #8, #17

Relationship between CSR dimensions, Cooperative Principles and SDGs

In addition to the direct relationship between cooperative principles and the SDGs, a correlation has been established between the dimensions of CSR, cooperative principles and the SDGs, providing a comprehensive framework for the evaluation of CSR in cooperatives. Table 5 reveals that CSR dimensions are not only aligned with cooperative principles, but also directly contribute to achieving multiple Sustainable Development Goals (SDGs). Cooperatives, by adopting these dimensions in their practices, can promote more inclusive, equitable, and sustainable development by providing a solid structure for assessing CSR in the context of credit unions (Porter & Kramer, 2011; ICA, 2017).

Table 5. CSR, Cooperative Principles and SDGs

CSR Dimensions	Cooperative Principles	Sustainable Development Goals (SDGs)
D1: Cooperative Governance Dimension	P2: Democratic control of members, P6: Cooperation between cooperatives, P7: Commitment to the community	#1: No Poverty, #5: Gender Equality, #8: Decent Work and Economic Growth, #10: Reducing Inequalities, #17: Partnerships to Achieve the Goals
D2: Social Dimension	P1: Open and voluntary membership, P2: Democratic control of members, P3: Economic participation of members, P4: Autonomy and independence, P5: Education, training and information, P7: Commitment to the community	#1: No Poverty, #5: Gender Equality, #8: Decent Work and Economic Growth, #10: Reducing Inequalities, #17: Partnerships to Achieve the Goals
D3: Environmental Dimension	P7: Community Engagement	#1: No Poverty, #8: Decent Work and Economic Growth, #17: Partnerships to Achieve the Goals
D5: Ethical Dimension and Transparency	P5: Education, training and information, P7: Community engagement	#1: No Poverty, #4: Quality Education, #8: Decent Work and Economic Growth, #10: Reducing Inequalities, #17: Partnerships to Achieve the Goals
D6: Technological dimension	P5: Education, training and information, P7: Community engagement	#9: Industry, innovation and infrastructure, #12: Responsible production and consumption, #17: Partnerships to achieve the goals

The cooperative governance dimension focuses on the governance structure and practices within cooperatives, emphasizing democratic participation and collaboration. According to Freeman's (1984) stakeholder theory, the participation of members in decision-making reinforces legitimacy and commitment to the organization. This approach also promotes gender equality and social inclusion (SDGs #5 and #10). Cooperation between cooperatives (P6) strengthens partnerships to achieve common goals (SDG #17), enhancing social and economic impact (SDGs #1 and #8).

The social dimension encompasses practices that promote inclusion, equity, and community development. Matten and Crane's (2005) theory of corporate citizenship suggests that companies have responsibilities to the community that go beyond economic benefits. Open and voluntary membership (P1) and education and training (P5) contribute to reducing poverty (SDG #1) and

improving gender equality (SDG #5). Economic participation and community engagement (P3 and P7) promote decent work and economic growth (SDG #8) and reduced inequalities (SDG #10).

The environmental dimension focuses on sustainable practices that minimize the environmental impact of cooperative operations. The integration of sustainable technologies, as suggested by the study by Potocan (2021), can improve the environmental and economic performance of cooperatives. Community engagement (P7) includes environmental responsibility, contributing to decent work and economic growth (SDG #8) and fostering partnerships for sustainable goals (SDG #17). These practices can also help mitigate the effects of poverty by ensuring a healthier environment and sustainable resources (SDG #1).

The economic dimension of CSR focuses on financial sustainability and equitable distribution of benefits. Birchall & Ketilson (2009) argue that cooperatives that integrate CSR into their strategy are more resilient during economic crises. The economic participation of members (P3) ensures that benefits are distributed equitably, contributing to the reduction of poverty (SDG #1) and inequalities (SDG #10), and promoting decent work and economic growth (SDG #8).

The ethical and transparency dimension refers to practices that ensure ethical conduct and transparency in all cooperative operations. Donaldson & Dunfee's (1999) theory of integrative social contracts states that companies must act in accordance with universal and local ethical principles. Education and training (P5) and community engagement (P7) reinforce transparency and ethics, contributing to quality education (SDG #4), reducing poverty (SDG #1) and inequalities (SDG #10), and fostering strategic partnerships (SDG #17).

The technology dimension focuses on the adoption and use of innovative technologies that improve CSR practices and sustainability. Chesbrough's (2003) theory of Open Innovation states that organizations can improve their performance and sustainability by integrating external and internal technologies. Education and training (P5) play a relevant role in the adoption of new technologies, while community engagement (P7) ensures that the technologies implemented benefit the local community and promote sustainable practices. The adoption of innovative technologies contributes to building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation (SDG #9). In addition, it supports responsible production and consumption (SDG #12) and strengthens partnerships for sustainable development (SDG #17).

Instrument validation

The results obtained during the validation process of the Corporate Social Responsibility (CSR) questionnaire in Ecuadorian savings and credit cooperatives are presented. The results are organized based on internal validation, external validation, statistical analysis, and final refinement of the questionnaire. In addition, the process of socialization and approval by the regulatory fiscal entity is included.

Internal validation results

The research team of the University of the Armed Forces ESPE conducted a comprehensive review of the questionnaire. Areas for improvement were identified in the clarity of the questions

and the relevance of the dimensions addressed. Table 6 presents the main comments and adjustments made.

Table 6. Internal Feedback and Adjustments

Research Team Comment	Adjustment made
The questions are ambiguous and could be more specific.	Adjusted wording for clarity and accuracy.
There is a lack of concrete examples to illustrate the questions and facilitate the understanding of the respondents.	Concrete examples were added to the questions to improve respondents' understanding and contextualization.
The formulation of some questions is confusing and could be interpreted in multiple ways.	Rephrasing of questions to ensure accuracy and unambiguous interpretation.
The technical terms used are not clear to all potential respondents.	Inclusion of clear definitions and detailed explanations in the questionnaire instructions to ensure understanding by all participants.
The rating scale used in some items is not adequate to capture the frequency of the practices described.	Review and adjust the rating scale to ensure that it accurately reflects the frequency of CSR practices in cooperatives.
The organizational structure and the control of the participation of the partners in decision-making are not addressed in a differentiated way in the related items.	Separation and clarification of items to specifically address organizational structure and control of partner participation in decision-making.
In relation to communication on accountability and information/education activities, it is not clearly represented.	Inclusion of specific items that assess the effectiveness of communication on accountability and information/education activities within the cooperative.
The technology dimension does not adequately address the use of technologies to ensure transparency and ethics in the cooperative's operations.	Addition of items related to the use of technologies to ensure transparency and ethics in the cooperative's operations.

External validation results

International and national evaluators from Spain, Argentina, Guatemala, Cuba and Ecuador carried out an evaluation of the questionnaire. The categories of sufficiency, clarity, coherence and relevance were used to assess each item. The results, based on the evaluations of seven experts, grouped into CSR dimensions, are presented in Tables 7, 8, 9, 10, 11 and 12.

Table 7. Dimension 1: Cooperative Governance

Item	Sufficiency	Clarity	Coherence	Relevance
1. Mission and Values Visibility	3.8	4.0	3.8	4.0
2. Strategic objectives	4.0	4.0	4.0	4.0
3. Organizational structure	3.9	4.0	3.7	3.8
4. Democratic leadership	4.0	3.9	4.0	4.0
5. Management in General Assembly	4.0	4.0	3.9	4.0
6. Open and voluntary entry	4.0	3.9	4.0	4.0
7. Education and training	4.0	4.0	4.0	3.9

Table 8. Dimension 2: Social

Item	Sufficiency	Clarity	Coherence	Relevance
1. Identification of needs	4.0	4.0	4.0	4.0
2. Social budget	4.0	4.0	3.9	4.0
3. Health and safety policies	3.9	4.0	3.9	3.9
4. Community contribution	4.0	3.9	4.0	4.0
5. Standards for social and environmental accounting	4.0	4.0	4.0	4.0
6. Integrative economic reports	4.0	4.0	3.9	4.0

Table 9. Dimension 3: Environmental

Item	Sufficiency	Clarity	Coherence	Relevance
1. Transparency in environmental sustainability	4.0	3.9	3.9	4.0
2. Support for conservation projects	4.0	3.9	4.0	4.0
3. Promotion of sustainable practices	4.0	4.0	4.0	4.0
4. Waste management and recycling	4.0	4.0	4.0	4.0
5. Reduced carbon footprint	3.9	4.0	4.0	4.0

Table 10. Dimension 4: Economic

Item	Sufficiency	Clarity	Coherence	Relevance
1. Economic and financial transparency	4.0	4.0	4.0	4.0
2. Generation of sustainable economic value	4.0	4.0	4.0	4.0
3. Diversification of financial services	4.0	3.9	4.0	4.0
4. Economic autonomy	3.9	3.9	4.0	4.0
5. Sourcing Local Supplies	3.9	4.0	3.9	4.0

Table 11. Dimension 5: Ethics and Transparency

Item	Sufficiency	Clarity	Coherence	Relevance
1. Ethical and transparent relationships	4.0	3.9	4.0	4.0
2. Rules to prevent bribery and corruption	3.9	4.0	3.9	4.0
3. Communication policies for accountability	4.0	4.0	4.0	4.0
4. Promoting transparency and access to information	4.0	4.0	4.0	4.0
5. Regular and detailed reports	4.0	4.0	4.0	4.0

Table 12. Dimension 6: Technology

Item	Sufficiency	Clarity	Coherence	Relevance
1. Using advanced technologies for sustainability	3.9	4.0	3.9	4.0
2. Use of digital platforms to communicate CSR practices	4.0	4.0	4.0	4.0
3. Investment in accessible technologies for vulnerable communities	3.8	3.9	3.8	3.9
4. Training in sustainable technologies	4.0	4.0	4.0	4.0
5. Use of technologies to ensure transparency and ethics	4.0	4.0	4.0	4.0

The experts gave consistently high average scores (mainly between 3.7 and 4.0) in all dimensions and for all the items evaluated. This indicates a unanimous and favorable acceptance of the instrument for measuring CSR in cooperatives. Experts consider that each item is sufficient, clear, coherent and relevant to evaluate CSR practices in cooperatives.

Statistical analysis of validation

Descriptive statistics were used to analyse assessments of sufficiency, clarity, consistency and relevance. Kendall's coefficient of agreement showed a high level of agreement among the evaluators, with a value of 0.85, indicating a significant consensus.

Final refinement of the questionnaire

Based on feedback and suggestions from internal and external validation, final adjustments were made to the questionnaire. The final version of the questionnaire is shown in Table 13.

Table 13. Dimensions and structure of the questionnaire

Dimension	Indicators	Items	Sample Questions
Cooperative Government	Mission and social commitment, coverage of strategic objectives, decision-making, equal participation, relations with stakeholders, strengthening in the market.	7	<p>To what extent do you consider that the mission, vision, principles and values of the cooperative are visible and accessible to members and other stakeholders? (Item 1)</p> <p>To what extent do the cooperative's strategic objectives, plans and projects cover the economic, financial, social and environmental spheres? (Item 2)</p> <p>To what extent does the organizational structure of the cooperative respond to the economic, financial, social and environmental spheres? (Item 3)</p>
Social	Attention to essential needs, safety and health policies, contributions to the community, economic reports and social actions, permanent education.	6	<p>To what extent does the cooperative identify and meet the essential needs of the target social market (education, health, security, recreation, housing and others) as part of its commitment to the protection and promotion of human rights? (Item 1)</p> <p>To what extent does the social budget meet the needs of the target social market? (Item 2)</p> <p>To what extent are the cooperative's policies effective in relation to safety, health, promotion of fair and equitable labour relations, gender equality and diversity? (Item 3)</p>
Environmental	Transparency in sustainability, support for environmental projects, sustainable practices in the supply chain, waste management, carbon footprint reduction.	5	<p>To what extent is the cooperative transparent about its policies and actions related to environmental sustainability? (Item 1)</p> <p>To what extent does the cooperative support local projects that contribute to the conservation of the environment? (Item 2)</p> <p>To what extent does the cooperative promote sustainable practices throughout its supply chain? (Item 3)</p>
Economic	Information to stakeholders, generation of sustainable value, diversification of financial services, risk and opportunity management, local supplies.	5	<p>To what extent does the cooperative provide information to members, employees and other external stakeholders about its economic and financial actions to ensure transparency? (Item 1)</p> <p>To what extent does the cooperative generate economic value in a sustainable way, ensuring equity in the distribution of benefits, promoting social inclusion and guaranteeing the financial well-being of its members? (Item 2)</p>

			To what extent does the cooperative promote the diversification of the financial services offered to its members and employees? (Item 3)
Ethics and Transparency	Knowledge of principles and values, transmission of values, evaluation of principles and values, education in values, ethical and transparent relationships.	5	<p>To what extent are ethical and transparent relationships established with the community, the families of the members, other cooperatives and the rest of the external stakeholders? (Item 1)</p> <p>To what extent does the cooperative implement mechanisms to prevent bad practices, bribes, corruption and others that violate human rights? (Item 2)</p> <p>To what extent do you think the cooperative effectively communicates its accountability activities and provides sufficient information about its operations and objectives to members and other stakeholders? (Item 3)</p>
Technology	Use of advanced technologies, digital platforms, technologies for access to services, training in sustainable technologies.	5	<p>To what extent does the cooperative use advanced technologies (environmental management systems, energy efficiency software, others) to promote sustainability and reduce environmental impact? (Item 1)</p> <p>To what extent does the cooperative use digital platforms (website, social media, mobile apps) to communicate its social responsibility and sustainability practices to members and the general public? (Item 2)</p> <p>To what extent does the cooperative invest in technologies that facilitate access to its services for vulnerable or marginalized communities (mobile banking, accessible applications, others)? (Item 3)</p>

4. Conclusions

The validation of the CSR instrument in savings and credit cooperatives was a rigorous process that involved the collaboration of experts from different countries. The Delphi methodology made it possible to reach a consensus on the relevance and clarity of the questionnaire items, ensuring the validity and reliability of the instrument. International collaboration enriched the validation process, incorporating diverse perspectives and ensuring that the instrument is applicable in different cultural and normative contexts.

The validated instrument is a useful tool to evaluate and improve CSR practices in cooperatives, contributing to sustainable development and the well-being of communities. The validation results highlight the importance of transparency and community participation in CSR practices,

providing a solid foundation for the implementation of continuous improvement strategies in credit unions.

The typology of Garriga & Melé (2004) provides a comprehensive structure to understand the different theories on CSR. By categorizing these theories into instrumental, political, integrative, and ethical, the authors help clarify the multiple approaches that exist in the literature and how each of them contributes to the understanding of CSR. This typology not only facilitates academic analysis, but also provides professionals with a framework to implement CSR practices more effectively and aligned with the various objectives and expectations of society.

In addition, the inclusion of the technological dimension in CSR, as discussed in the study by Potocan (2021), highlights the importance of adopting sustainable technologies to improve the economic and environmental performance of cooperatives. Technology not only facilitates transparency and ethics in operations, but also promotes innovation and long-term sustainability.

The methodology developed for the validation of the CSR instrument can be adapted and used in other sectors and regions, expanding its impact and usefulness. The integration of CSR in cooperatives not only strengthens their resilience to economic shocks, as Birchall & Ketilson (2009) argue, but also improves their ability to generate social and economic value in a sustainable manner.

In addition, the adoption of CSR practices aligned with the Sustainable Development Goals (SDGs) and cooperative principles can serve as a model for other organizations seeking to balance economic performance with social and environmental impact. The synergy between these elements provides a solid structure to continuously evaluate and improve CSR practices, promoting more inclusive and equitable development.

Ultimately, this study offers a significant contribution to the field of CSR, providing a solid and validated methodology that can be replicated and adapted in various cooperative contexts at the international level. The validation of the CSR instrument not only ensures its relevance and effectiveness, but also strengthens the capacity of cooperatives to contribute to the sustainable development and well-being of their communities.

It is proposed to develop a study on the adaptation of the instrument to other sectors, such as manufacturing, the service sector and agriculture. Conduct longitudinal studies to assess how the integration of CSR practices influences the resilience of cooperatives in the face of economic and social shocks. Investigate the role of emerging technologies, such as artificial intelligence and the Internet of Things (IoT), in improving CSR practices to increase transparency, efficiency, and sustainability in cooperative operations. Expand research to include international comparisons between cooperatives from different countries. Finally, to examine the impact of CSR education and training programs on the adoption and effectiveness of these practices within cooperatives.

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