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Governance Trust as a Structural Driver of Sustainability Preparedness: A Comparative SEM Analysis in Emerging Market Financial Cooperatives

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Abstract

Institutional trust plays a critical role in shaping organizational responses to risk, particularly in emerging market financial systems. This study examines the psychosocial mechanisms through which institutional trust influences preparedness for social responsibility (SR) implementation in Ecuadorian savings and credit cooperatives. We used covariance-based structural equation modeling (CB-SEM) with 5000 bootstrap resamples ($n = 2,116$) to assess four competing structural models. These models compared direct, sequential, and parallel mediation requirements. The findings demonstrate that institutional trust has a significant direct impact on preparation ($\beta = 0.626, p < 0.001$), accounting for 42.3% of its variance. Statistical rejection of full mediation models validates that readiness cannot be exclusively elucidated through cognitive or affective risk perception pathways. Trust exhibited a minor positive correlation with anxiety ($\beta = 0.100, p < 0.001$). Affective mechanism: This link is statistically significant, but its size is little, which means it doesn't have a big effect. These results show that being ready for SR implementation in cooperative finance is more about governance than about threats. The study enhances sustainability research by recognizing institutional trust as a fundamental factor influencing organizational resilience in emerging market financial cooperatives.

Keywords: institutional trust; risk perception; preparedness; social responsibility; cooperative finance; structural equation modeling; emerging markets; governance sustainability

1. Introduction

The disruptive environment faced by financial institutions has forced them to integrate social responsibility into their business models, generating increasing expectations from stakeholders as well as regulatory pressure from governments. The global financial landscape has changed a lot since the 2008 crisis. More and more people are realizing that social responsibility and financial soundness are strongly related [1,2]. So, more and more traditional banks are starting to use corporate social responsibility (CSR) methods in their management. Also, cooperative financial institutions are based on community development, which is shown in their aim to serve their member-owners. Recent studies show that implementing social responsibility (SR) initiatives and maintaining good governance significantly reduces reputational and financial risks for financial organizations [3,4]. This type of research presents compelling arguments in favor of implementing social responsibility strategies in organizations, beyond the mere moral perspective.

In the same context, all economies have been affected by institutional trust (regulations, management systems, and governing bodies), which influences how companies perceive and manage risk. Classical theory holds that trust is an expectation that reduces transactional risks and social complexity [5–7]. In the current context, trust facilitates regulatory compliance, reduces perceived risk exposure, and optimizes organizational performance. It has been shown that a higher level of

trust leads to a reduction in banking risk, even in the financial sector [8,9]. Thus, trust is conceived as a social mechanism that reduces complexity and uncertainty in transactions [5]. In the organizational context, institutional trust refers to the belief in the integrity, competence, and benevolence of formal structures (assemblies, boards of directors, and regulatory authorities) to manage risks and fulfill their obligations [10,11].

Given this situation, corporate social responsibility (CSR) has evolved from a voluntary philanthropic initiative to a strategic necessity for risk management and the generation of sustainable value [12,13]. For financial institutions, having strong CSR policies is important for staying legitimate, getting a social license to operate, and building strong relationships with stakeholders [14–16]. SR has gone from being a small aspect of risk management to being a key part of it. To make sure their businesses are sustainable, companies now include environmental, social, and governance (ESG) risks in their enterprise risk management (ERM). They see these risks as just as essential as social and environmental concerns [17,18].

In emerging markets, the relationship between social responsibility and institutional trust has become more relevant due to often less developed regulatory frameworks and greater institutional gaps. This situation creates considerably serious problems when combined with the underlying economic instability. The implementation of social responsibility in these markets has faced institutional gaps (enforcement gaps, knowledge gaps, and intermediary gaps) that have hindered policy implementation and increased the risk of failure [19,20]. In particular, cooperative enterprises provide a distinctive environment in which constituents are prioritized and members govern [4,21]. This connects social responsibility to regulatory compliance and identity. In these contexts, financial cooperatives frequently function as essential mechanisms for financial inclusion, particularly in regions where traditional banking services are restricted [22,23]. Consequently, the Nepalese cooperative sector serves as a prime example of the fundamental relationship between governance structures and credit default risk, leverage risk, liquidity risk, and investment risk, thereby demonstrating the universal significance of sound governance frameworks in cooperative risk management [22].

The cooperative business model, with its distinctive structure and community focus, provides a unique environment for the analysis of how trust in institutions helps mitigate risk [24,25], thereby fostering resilience in individuals. Unlike conventional financial institutions, cooperatives operate under the principle of member ownership and control. Such an arrangement creates complex trust dynamics among the various stakeholders that directly influence risk perception and management approaches [24]. Trust facilitates regulatory compliance and modulates emotional anxiety (worry) and perceived preparedness [26,27].

Additionally, cooperatives in emerging markets are confronted with two significant obstacles: the necessity to simultaneously resolve urgent social and environmental issues and preserve financial stability. This dynamic generates distinctive risk profiles that necessitate innovative strategies. Social responsibility (SR) is fundamental, rendering the efficient implementation of SR not merely an option but an existential imperative [28]. However, the implementation of social responsibility (SR) strategies is fraught with inherent risks, including the potential for the organization to fail to accomplish its objectives, damage its reputation as a green organization, misallocation of resources, and erosion of stakeholder trust [29,30]. A critical route to attaining this success is through institutional trust. Recent research has investigated the extent to which cooperative directors influence their organization's social responsibility policies, thereby illustrating that the implementation of social responsibility in these types of organizations is a multi-level process [28,31].

Previous research has also shown that trust is essential for cooperative finance [32,33] and a crucial component of organizational risk management [11]. However, there is still a significant lack of practical analysis on how trust in institutions acts as a means of reducing risk, particularly in the implementation of social responsibility, from the perspective of employees in cooperatives in developing markets. This study addresses this deficiency by examining the psychosocial mechanisms [34–36] through which trust affects risk perception (both the likelihood of its occurrence and the

severity of its consequences), emotional anxiety (worry) [26,27], and ultimately, the perceived willingness of financial cooperatives to meet their social responsibility obligations.

It is composed of substantial financial cooperatives that facilitate community development and ensure universal financial access [37]. It is crucial to comprehend the methods by which these cooperatives mitigate the risks associated with social responsibility (SR) in order to maintain their operations and contribute to the growth of the local economy.

This research contributes to the body of knowledge regarding cooperative management, social responsibility, and behavioral risk in financial cooperatives in emergent and global economies.

To explain this approach, the following main objective was proposed: to analyze the psychosocial mechanisms through which trust in institutional authority influences the cognitive (probability and severity) and affective (worry) dimensions of risk perception and how these dimensions impact preparedness to implement social responsibility. To achieve this objective, a survey was conducted among employees at various hierarchical levels of savings and credit cooperatives in Ecuador. Additionally, a phased mediation model was developed to investigate the relationship between the perceived level of preparedness to implement SR and trust in authorities. The theoretical framework is analyzed in the subsequent section, which is based on the literature on trust in institutional authority as a risk mitigation mechanism in the implementation of social responsibility (SR) in financial cooperatives in emerging markets. It evaluates the organization's perceived preparedness and risk perception (cognitive and affective). This is followed by the materials and methods section, which describes the study context, data collection, the measures considered, and the estimation methodology. Finally, the empirical results are presented, followed by a discussion of the practical implications of the findings, including the study's main conclusions and limitations.

1.1. Theoretical Framework

Slovic [38], in his Risk Perception Theory, explains from a psychometric perspective how each individual evaluates and reacts to risk situations (risk perception). To do this, he analyzes two cognitive dimensions: probability (the likelihood of the adverse event occurring) and severity (the magnitude of the adverse event's impact). This analysis also includes an affective dimension: concern about the imminence of the adverse event [39]. In other words, risk perception is both an emotional and rational process that, in practice, is influenced by factors such as familiarity with the source of the risk (knowledge), the degree of perceived control (preparedness), and the level of trust in regulatory authorities (trust) [40]. The literature emphasizes the subjectivity of risk and the fact that each person can exhibit varying degrees of concern based on their emotions and personal beliefs. Even in the presence of an objective threat, this type of behavior is observed [41–43].

This subjectivity in risk perception is especially pertinent in intricate organizational contexts, such as financial cooperatives in emerging markets, where management decisions must take into account the subjective perceptions of a variety of stakeholders in addition to objective risks. Recent research by Sharabani and Garyn-Tai [43] confirms that emotions and risk perception interact dynamically, significantly influencing preventive behavior and strategic decisions.

Institutional trust is defined as the faith individuals have that institutions (public or private) will act competently and with good intentions in the face of uncertainty [44]. Recent studies highlight that high institutional trust promotes risk management. For example, research on disaster risk reduction shows that when the population trusts the government and experts (scientists, environmental organizations, etc.), the adoption of preventive measures (purchasing insurance, emergency plans, etc.) increases [45]. Furthermore, trust generates greater solidarity and community commitment, leading to more effective responses to crises. In fact, theoretical models of risk perception consider factors such as the perceived probability of an adverse event, the severity of its consequences, the concern it provokes, and the level of preparedness it induces (classic components of theories such as Protection Motivation Theory) [46–49]. In short, when institutions are credible, the population tends

to undervalue the perceived probability and severity of the risk and increases its willingness to prepare.

This framework is especially relevant for financial cooperatives. These organizations have a dual mission (business and social objectives) and often integrate the local community into their management [28]. Consequently, savings cooperatives frequently emphasize the social dimension in their corporate social responsibility (CSR) strategies. Nevertheless, Allen et al. [28] contend that traditional banks and digital banks are subject to comparable obligations to preserve ethical conduct. The primary distinction is that cooperatives can apply their community-based philosophy to enhance the trust of members and stakeholders by enhancing participatory governance and transparency. In this regard, the implementation of sensible risk management practices (risk identification, transparency, and culture) not only enhances internal control but also establishes trust. Kesanta et al. [50] demonstrate that the integration of a risk management culture into cooperative fosters trust and the recruitment and retention of members. These practices foster a sense of collective security, as members believe that their assets are being safeguarded, which in turn increases their level of dedication to the organization. Ultimately, in a strong cooperative, trust and social capital reinforce financial sustainability and risk mitigation.

Finally, the cooperative's CSR can be considered an explicit mechanism for mitigating social and reputational risks. Recent theoretical frameworks associate CSR with the mitigation of institutional risk via reputation enhancement and stakeholder contentment [51]. For example, in international construction projects, Dang et al. [51] demonstrate that CSR does not directly mitigate project risks; however, it does enhance corporate reputation and customer satisfaction, which collectively mitigate project risks. In Pakistan's financial sector, Iqbal et al. [52] found that firms that exhibit increased transparency and social commitment exhibit substantially lower risks of abrupt share price declines. In simpler terms, institutions' credibility is enhanced by ethical compliance, transparency in information, and community investments. This credibility enhances the confidence of stakeholders (investors, partners, and consumers), thereby decreasing the perceived volatility of the environment.

Combined, recent literature from both developed and emergent countries substantiates the notion that institutional trust and corporate social responsibility (CSR) function in a synergistic manner to reduce risks. Cooperatives foster proactive attitudes and reduce their members' perceptions of vulnerability by establishing trust through social and good governance initiatives. In a conceptual sense, a high-trust environment is characterized by the promotion of preparedness and cooperation, while the assessment of risk probability and severity is minimized. Kesanta et al. [50] and Pérez-Campdesuñer et al. [53] have demonstrated that the financial sustainability and payment discipline of the cooperatives analyzed are enhanced by the implementation of formal risk management systems and community-oriented CSR practices; this has been demonstrated to enhance institutional trust. These results confirm that the empirical constructs of the study (probability, severity, concern, preparedness) are interrelated with trust and social responsibility. Specifically, the trustworthiness and social commitment of an institution result in its members adopting more responsible behaviors and perceiving less risk. Therefore, the new reference framework emphasizes that, in cooperatives in emerging markets, institutional trust is a key risk mitigation mechanism, facilitated by robust CSR and organizational risk management cultures.

1.2. Hypothesis

In this context, it was hypothesized that the increase in trust that employees of financial cooperatives have in their authorities leads to an increase in the level of preparedness to face risk during the implementation of social responsibility. In parallel, the following hypotheses were proposed:

H1. *Trust is negatively related to probability perception.*

Although there are few direct studies on how trust affects risk perception in financial cooperatives and their social responsibility, research in other contexts shows that this relationship does exist. Eiser et al. [54]; Han et al. [55]; Siegrist and Árvai [56]; Siegrist et al. [57]; and Bonfanti et al. [45] discovered that the perceived probability of risks is substantially reduced by trust in authorities, when analyzing various contexts. In the same vein, inflated probability judgments are linked to low trust [58]. Trust is a cognitive shorthand that reduces perceived vulnerability in situations of uncertainty when authorities are perceived as competent and benevolent. Hypothesis H1 was proposed on the basis of these theoretical and empirical findings, which hypothesized that institutional trust would adversely affect individuals' evaluations of the likelihood of adverse events.

H2. *Trust is negatively related to severity perception.*

In this case, too, there are no direct empirical studies in the field of cooperative SR. In multiple contexts, increased institutional trust is related to a decrease in perceived severity. Siegrist, Gutscher, and Earle [59] have shown that trust makes people think that the risks of technology are less serious. In disaster risk research, Bonfanti [45] concludes that communities with greater trust in public institutions report lower expected severity of damage caused by natural hazards. Contrary to these findings, Breakwell [36] suggests a complex relationship regarding risk communication, arguing that increased trust in information sources can, paradoxically, increase the perception of severity if those sources effectively communicate the potential magnitude of the consequences. No indexed studies were found, indicating that trust in internal authorities increases the perceived severity of impacts. On the contrary, trust tends to moderate people's perception of the level of impacts, based on the premise that they will be controlled or mitigated. The results supported the proposed H2.

H3. *Trust is positively related to preparedness perception.*

The theoretical framework supporting this relationship was identified using Protection Motivation Theory, proposed by Rogers [43]. This theory posits that trust increases perceived self-efficacy and the willingness to prepare for risks. Kesanta et al. (2025) demonstrated in their study of savings and credit cooperatives in Tanzania that trust attracts and retains members, supported by a strong risk management culture, thereby boosting institutional preparedness to face risks. Pérez-Campdesuñer et al. [53] reported that financial trust significantly increases preparatory behaviors in credit contexts. Organizational studies highlight that trust in management improves adherence to risk management protocols and prepares staff to face risks [60]. Wachinger et al. [61] and Bonfanti [45] demonstrated that institutional trust increases disaster preparedness. A similar phenomenon occurred when analyzing public health in the pandemic context, where trust in government anticipates preventive behavior [57]. When individuals trust institutions, they perceive a greater collective capacity to implement complex policies such as social responsibility effectively. Although few studies focused on cooperatives were identified, the literature on organizational trust consistently links trust with proactive risk management behavior (preparedness). The proposed H3 has strong theoretical support across multiple disciplines.

H4. *Trust is bidirectionally related to worry perception.*

Worry is an affective response to a perceived threat. Trust is expected to moderate anxiety, not amplify it. The relationship between trust and emotional worry has strong theoretical and empirical support. Finucane et al. [62], in their affect heuristic theory, described how positive trust creates an "affect heuristic" that systematically reduces negative emotions, such as worry. Similarly, Slovic et al. [34] created a model showing that trust in institutions mainly affects our feelings, helping to lessen negative emotions like fear that come from thinking about risks [26,42,56,63]. These theoretical foundations provided a strong basis for anticipating a significant negative relationship between trust in institutions and emotional distress (H4).

H5. Probability is positively related to severity perception.

Classical risk models, such as the Health Belief Model (HBM), the Protection Motivation Theory (PMT), and the Extended Parallel Process Model (EPPM), analyze probability and severity as independent assessments, where one does not influence the other [46,47,64]. Others, in seeking to relate them, have not found a consistent causal relationship between the two dimensions [65]. On the contrary, in contexts other than social responsibility (SR), Slovic (1987) and subsequent studies assume that these variables are interrelated. Similarly, Tomás-Cardoso et al. [41] found a significant positive correlation between the perceived probability of COVID-19 infection and the perceived severity of its consequences. Although there is no specific evidence for cooperatives and SR, a positive connection between probability and severity has been observed several times in different situations.

H6. Probability is positively related to preparedness perception.

Protection Motivation Theory (PMT) posits that a high perceived probability of a threat is one of the factors that motivates the adoption of protective behaviors [45]. In the context of the pandemic, Sharabani & Garyn-Tai [43] found that a higher perceived probability of infection drove preparedness. Lindell & Perry [66] and Bubeck et al. [67] found similar results in different contexts. The literature suggests that an increase in perceived probability should promote the intention to prepare, as proposed by H6.

H7. Probability is positively related to intention to worry.

No studies were found in the specific context. In other contexts, Han and Weng [27] developed an integrated model demonstrating how perceived probability activates emotional responses, generating greater worry. Shiloh et al. [68] and Zhou et al. [42] found similar results in different contexts. The finding by Keel et al. [69] analyzes a worry-probability relationship and shows how increased worry about crime among women impacts the increased perceived probability of victimization. There is robust theoretical and empirical support for this relationship (H7).

H8. Severity is positively related to preparedness perception.

In analyzing the context of financial crises, Lins et al. [29] identify how the perceived severity of the consequences of an adverse event leads companies to adopt more cautious and prepared strategies. Zhang & Xu [70] demonstrate that the perceived severity of floods predicts adaptive intentions (preparedness). Risk behavior strongly supports this hypothesis (H8).

H9. Severity is positively related to worry perception.

Risk-as-feeling theory identifies how the magnitude of perceived harm severity motivates an individual's emotional responses (worry) [71]. This aligns with the findings of Shiloh et al. [68] in the healthcare field, where perceptions of severity significantly increase assessed worry. Studying the business environment in the context of the financial crisis, Lins et al. [29] demonstrate how increased perceptions of the severity of the consequences of misfortune lead companies to adopt more cautious and elaborate strategies (preparedness). Similar behaviors of these variables have been observed by Breakwell [36], Tomás-Cardoso et al. [41], and Zhou et al. [42]. The positive relationship between severity and worry is strongly supported by theoretical frameworks for predicting risk behavior (H9).

H10. Worry is positively related to preparedness perception

This relationship presented a particular theoretical complexity. On the one hand, Protection Motivation Theory (PMT) suggested that higher levels of worry should increase preparedness [46]. However, the literature also identified nonlinear and contextual effects in this relationship. In this

regard, Sjöberg et al. [35] argued that the relationship between negative affect (worry) and preparatory behaviors follows an inverted U-shaped curve, where moderate levels of worry optimize preparedness, while high levels reduce it. This notion was corroborated in the studies by Earle [26] and Han & Weng [27]. Subsequently, Breakwell [35] demonstrated that in organizational contexts with high institutional trust, emotional coping mechanisms (worry) are activated before preparatory action mechanisms (preparedness). Alternatively, Sharabani & Garyn-Tai [43] identified that the variable of concern served a mediating function between risk perception and preparedness. No unified support was found for the H10 proposal. This theoretical tension generated a relevant research question: in the specific context of Ecuadorian financial cooperatives with high institutional trust, would emotional concern translate into greater preparedness for the implementation of social responsibility?

The proposed model adequately integrates the relationship that institutional trust maintains with the cognitive and affective dimensions of risk perception, as illustrated in Figure 1 below.

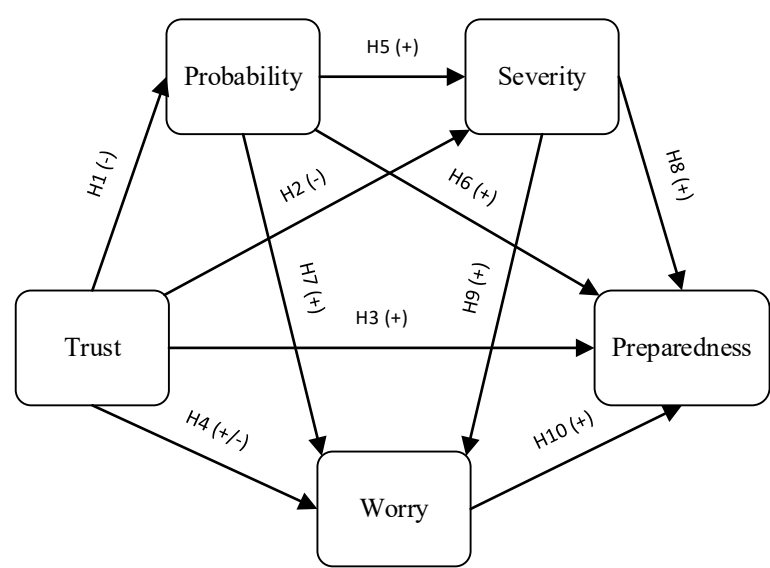


Figure 1. Represents the proposed conceptual model; it summarizes the hypotheses raised.

2. Materials and Methods

2.1. Study Area

The Ecuadorian cooperative financial system is a fundamental pillar of the popular and solidarity economy. It includes savings and credit cooperatives (SCCs), constitutionally recognized as a strategic part of the national financial sector. According to the Popular and Solidarity Economy Superintendency (PSES) [37], this sector comprises 288 financial cooperatives accredited by the PSES that function as mechanisms for economic inclusion, especially in regions where traditional banking services are limited [72]. SCCs account for almost 30% of the national financial system [73] and operate under principles of collective ownership, democratic governance, and reinvestment of surpluses in community development. The provision of services to the most vulnerable segment of the population distinguishes these institutions. They operate primarily in rural areas or cantons with high levels of poverty, transferring resources from the economically stronger sectors to the most disadvantaged and underserved sectors of traditional banking [73,74]. This distinguishes them from conventional financial institutions.

This study was conducted in 19 savings and credit cooperatives (SCC) in Ecuador, each with assets valued at more than 500 million USD and a combined total of approximately 22 billion USD in total assets. The social role these institutions fulfill guarantees universal access to basic financial services while promoting local development through social responsibility programs focused on their

communities of influence, microenterprise development, and the quality of life of their members [23,75,76].

The cooperative sector in Ecuador is an ideal setting for the investigation of risk perception in the implementation of social responsibility strategies. The democratic governance structure, which involves the participation of members and employees in decision-making, establishes a trusting environment that influences the perception and management of risks associated with social initiatives [25,76]. In emerging markets such as Ecuador, cooperatives are confronted with the challenge of simultaneously addressing urgent social issues and fostering the sector's financial resilience, amidst the economy's instability and ambiguous regulations. This natural conflict creates unique risk situations that need new ways to handle them, with trust in institutions being a key element for the long-term success of their social plans [19,20].

2.2. Sample and Data Collection Procedure

The study adopted a non-experimental, cross-sectional design with a quantitative approach, selecting a purposive sample of 19 solidarity-based financial institutions (SCIs) in Ecuador that met the minimum selection criterion of USD 500 million in assets, representing solid institutions within the solidarity-based financial system. Organizations with sufficient operational maturity to have implemented structured social responsibility strategies were included in this criterion.

The demographic composition was indicative of the organizational heterogeneity, with 55.7% of the population being female, an average age of 35.8 years ($SD=9.1$), 4.7% of the population in managerial roles, and 90.4% in higher education. In terms of functional roles, 38.1% were employed in "Member Relations and Support" and 28.5% in "Administrative Management," which guarantees cross-functional representation across operational areas and hierarchical levels.

The data collection procedure was carried out through institutional coordination with the PSES, which validated the ethical protocol and facilitated access for participating cooperatives. After obtaining institutional informed consent, the managers of each SCC distributed the online survey link to all members of their teams during the period of November 2024–January 2025. Participation was voluntary, and ultimately, 2,116 employees responded. The instrument underwent a rigorous validation process, starting with two rounds of peer review by academics who specialize in risk management and social responsibility, followed by a final review by SEPS technical experts to assure contextual content validity. The instrument was developed in Spanish.

Absolute anonymity of responses, explicit informed consent at the commencement of the questionnaire, voluntary participation, and the exclusive use of data for academic purposes were all ethical considerations. To ensure the validity of the process, a system for verifying consistent responses was implemented, maintaining a 100% effective response rate.

2.3. Measures

The study operationalized five fundamental latent constructs to analyze the role of institutional trust as a risk mitigation mechanism: Trust, Probability, Severity, Worry, and Preparedness. Each construct was measured using multiple observable indicators specifically designed for the context of social responsibility in financial cooperatives.

The Trust construct was defined as 'Level of trust in the institution, its management bodies, and authorities for the application of social responsibility policies, strategies, or actions in the cooperative'. It was evaluated using 3 items: Assembly and Boards to solve problems in SR implementation (Trust01), President and Management (Trust02), y external organizations (Trust03). Probability operationalized the subjective expectation of adverse events occurring during the implementation of social policies, evaluated through 3 specific scenarios: governance failures (Prob01), insufficient socioeconomic coverage (Prob02) and unsustainable technologies (Prob03). The severity of the perceived impact of risks materializing was captured by the items, which were parallel to those of probability (Sever01-Sever03). Worry quantified the affective response to potential hazards in SR implementation through the use of three indicators: not implemented (Worry01),

partially or inadequately implemented (Worry02), and incorrectly implemented (Worry03). Lastly, Preparedness evaluated the institutional preparedness level for SR implementation, as measured by four items: strategic effectiveness (Prep01), satisfaction of needs (Prep02), policy effectiveness (Prep03), and inclusion in financial reports (Prep04) (refer to Table A1).

The reflective indicators on a 5-point Likert scale (1="Strongly disagree" to 5="Strongly agree") were employed to measure the perceptions and attitudes of employees, which were captured by the conceptual model and its constructs (refer to Table A2). The proposed dimensional structure was validated through confirmatory factor analysis (CFA), which demonstrated convergent validity (AVE > 0.60) and outstanding composite reliability indices (CR > 0.86 for all constructs). The standardized factor loadings surpassed the minimum threshold of 0.7.. Discriminant validity was confirmed using the criterion proposed by Fornell & Larcker [77], where the square root of the AVE for each construct exceeded the inter-construct correlations (Table 3). This psychometric rigor ensured the instrument's suitability for subsequent structural equation modeling.

3. Results

Descriptive Analysis

Missing data were 0% for all items. All elements showed skewness and kurtosis values outside acceptable ranges; the data don't follow a normal distribution.

Thirty-four outliers (sample 1.61%) were identified using box plots. The model fit results and the parameter estimate after removing the outliers were compared. The variations were not representative enough to affect the suitability of the model (H1 ∇ =0.001; H2 and H4 ∇ =0.011; H3 ∇ =0.024; H5 ∇ =0.006; H6 Δ =0.006; H7 ∇ =0.006; H8 Δ =0.009; H9 ∇ =0.008; H10 ∇ =0.007; χ^2 from 230.801 to 238.781; χ^2 /df from 20.445 to 20.540; CFI from 0.996 to 0.995; IFI from 0.996 to 0.995; TLI from 0.995 to 0.994; NFI from 0.993 to 0.992; RMSEA from 0.026 to 0.027; SMRM from 0.016 to 0.012). Considering that in both cases: the p-values are similar, the variations do not affect the model fit (< 0.024), the outliers identify a specific extreme valuation of the informants' perception, and in order not to incur in data manipulation to improve the model fit results, we show both groups of results and take a solid estimate of the entire sample, supported by the technical and ethical justification presented.

Harman's one-factor test determined that there is no significant common method bias with an explained variance for the first factor of 24.38% (<50%). All latent variables' discriminant validity HTMT (Heterotrait-Monotrait Ratio) is <0.66, indicating that they are different both theoretically and empirically [78].

Table 1. Descriptive Statistics.

Variable	Mean	Standard Deviation
Trust		
Trust01	4.384	0.858
Trust02	4.543	0.787
Trust03	4.249	0.928
Probability		
Prob01	2.222	1.306
Prob02	2.378	1.252
Prob03	2.402	1.252
Severity		
Sever01	3.993	1.284
Sever02	3.927	1.239

Sever03	3.906	1.225
Worry		
Worry01	3.966	1.264
Worry02	3.930	1.218
Worry03	4.024	1.312
Preparedness		
Prep01	4.616	0.602
Prep02	4.500	0.640
Prep03	4.474	0.676
Prep04	4.413	0.708

3.2. Reliability and Validity

Table 2. Confirmatory Factor Analysis Summary: Measurement Model, Validity and Reliability.

Variable	Loadings
Trust (CR = 0.886; AVE = 0.723; CA = 0.954)	
Trust01	0.929
Trust02	0.868
Trust03	0.744
Probability (CR = 0.969; AVE = 0.913; CA = 0.969)	
Prob01	0.927
Prob02	0.980
Prob03	0.959
Severity (CR = 0.969; AVE = 0.913; CA = 0.969)	
Sever01	0.933
Sever02	0.980
Sever03	0.953
Worry (CR = 0.950; AVE = 0.864; CA = 0.949)	
Worry01	0.927
Worry02	0.963
Worry03	0.898
Preparedness (CR = 0.861; AVE = 0.608; CA = 0.859)	
Prep01	0.690
Prep02	0,816
Prep03	0,819
Prep04	0,787

Table 3. Confirmatory Factor Analysis (CFA): Correlations Between Constructs and Average Variance Extracted (AVE).

Construct	Trust	Probability	Severity	Worry	Preparedness	AVE
Trust	0,850					0,723
Probability	-0,123	0,956				0,913
Severity	0,200	0,188	0,956			0,913

Worry	0,100	0,142	0,213	0,930		0,864
Preparedness	0,626	-0,077	0,048	0,011	0,780	0,608

Note: Diagonal is the square root of the AVE

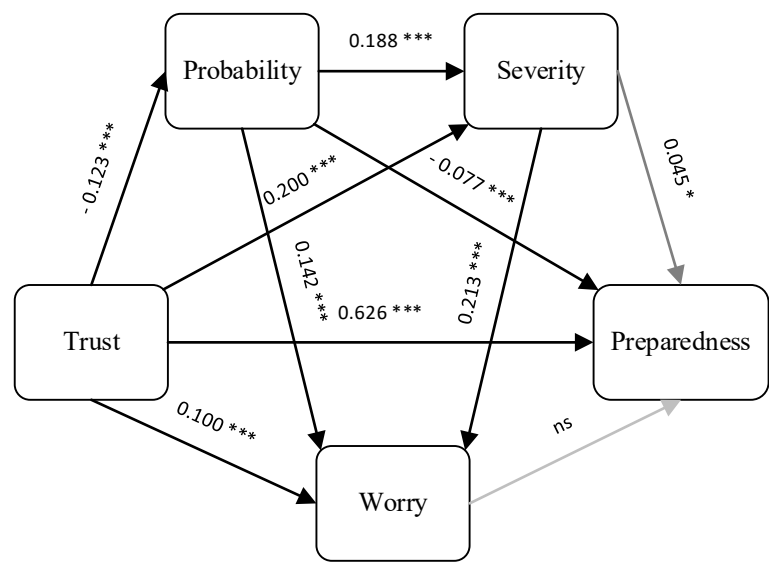
3.3. Testing of hypotheses

Structural Equation Model: Hypothesis Testing

The analysis of the study problem raised the need to simultaneously evaluate the relationships between the different constructs underpinned by a complex model. To this end, structural equation modeling using the maximum likelihood method was used. The hypothesized model was estimated with the results shown in Table 4.

Table 4. Structural Equation Model (SEM): Model Fit Summary and Parameters Estimates.

Hyp.	Causal Relationships	Stand. Coeff.	p-value	Decision
H1	Trust → Probability	-0,123	***	Supported
H2	Trust → Severity	0,200	***	Supported
H3	Trust → Preparedness	0,626	***	Supported
H4	Trust → Worry	0,100	***	Supported
H5	Probability → Severity	0,188	***	Supported
H6	Probability → Preparedness	-0,077	***	Supported
H7	Probability → Worry	0,142	***	Supported
H8	Severity → Preparedness	0,045	*	Supported
H9	Severity → Worry	0,213	***	Supported
H10	Worry → Preparedness	0,011	ns	Not Supported
Model Fit (Summary)				
Chi-square= 230,801, df=94; $\chi^2/df=2,455$				
CFI=0,996; IFI=0,996; TLI=0,995; NFI=0,993; RMSEA=0,026; SRMR=0,0160				
Note: * p <0.05; ** p<0.01; *** p<0.001; ns=not significant				
Notation:				
CFI: Comparative Fix Index; IFI: Incremental Fit Index; TLI: Tucker Lewis Index; NFI: Normed Fit Index; RMSEA: Root Mean Square Error.				



Note: 0 ** p<0.01; *** p<0.001; ns=not significant.

Figure 1. Conceptual model: graphical description with estimated parameters.

Ten hypotheses were proposed with robust and well-founded support. Nine of them obtained significant confirmation data; the only one with non-significant results (H10: Worry -> Preparedness) is a finding as valuable as those that did obtain supported results, suggesting that "preparedness" is driven more by confidence and objective risk assessment than by anxiety.

3.4. Structural Model Comparison

Chi-square difference tests indicated that the Full Integrated Model (M2) significantly improved fit relative to the Direct Governance Model (M1), $\Delta\chi^2(81) = 189.049$, $p < 0.001$. Although incremental changes in CFI were minimal ($\Delta CFI = -0.001$), the increase in explained variance supports the inclusion of mediating mechanisms.

Constraining the direct path from trust to preparedness (M3) resulted in a substantial deterioration of model fit compared to M2, $\Delta\chi^2(32) = 853.670$, $p < 0.001$, confirming that institutional trust cannot be fully mediated through cognitive pathways alone.

The integration of partial mediation models yields the most accurate representation of the data, as evidenced by the significant loss of fit between M4 and M2 when the direct effect was eliminated and the structure was simplified ($\Delta\chi^2(4) = 992.715$, $p < 0.001$; $\Delta CFI = -0.031$).

However, neither model outperformed the integrated specification. The non-nested comparison between M3 and M4 based on information criteria revealed marginal differences, with minor parsimony advantages depending on AIC/BIC.

Overall, results strongly support the Partial Mediation Model (M2) as the most theoretically coherent and empirically robust structural specification.

Table X. Comparative fit indices and explanatory power across competing structural models.

Model	χ^2	$\frac{d}{f}$	χ^2/df	CFI	TLI	RMSEA	SRMR	AIC	BIC	R ² Preparedness
M1 Direct Governance	41.752	13	3.212	0.997	0.994	0.032	0.0124	71.752	156.612	0.415

M2 Full										
Integrated	230.801	9	2.455	0.99	0.99	0.026	0.0160	314.801	552.407	0.423
(Partial		4		6	5					
Mediation)										
M3										
Sequential	1,084.47	6	17.49	0.96	0.94		0	1,142.47	1,306.53	
Cognitive		1	2	1	0	9	0.088	.1728	1	2
(Full										0.021
Mediation)										
M4 Parallel										
Mediation	1,223.51	9	12.48	0.96	0.95		0	1,331.51	1,514.49	
(Full		6	8	5	5	7	0.074	.1433	6	3
Mediation)										

Note: All models were estimated using covariance-based structural equation modeling (CB-SEM) in AMOS 24 with maximum likelihood estimation and bias-corrected bootstrapping (5000 resamples; 95% confidence intervals). Nested model comparisons were conducted using chi-square difference tests ($\Delta\chi^2$). Non-nested models were compared using AIC and BIC criteria. CFI differences ≥ 0.01 were interpreted as meaningful changes in model fit.

Table Y. Chi-square difference tests and incremental fit comparisons.

Comparison	$\Delta\chi^2$	Δdf	p-value	ΔCFI	$\Delta RMSEA$	AIC Difference	Decision
M2 vs M1	189.049	81	< 0.001	-0.001	+0.003	M2 lower	Prefer M2 (incremental explanatory gain)
M4 vs M2 (nested)	992.715	4	< 0.001	-0.031	+0.052	M2 much lower	Strong deterioration; retain M2
M2 vs M3	853.670	32	< 0.001	+0.036	-0.018	M2 lower	Reject full mediation (M3)
M3 vs M4*	—	—	—	+0.005	-0.002	M3 lower	Compare via AIC/BIC; slight preference M3

Note: Chi-square difference tests ($\Delta\chi^2$) with corresponding degrees of freedom were employed to execute nested model comparisons. Meaningful variations in model fit were interpreted as differences in CFI ≥ 0.01 . Information criteria (AIC/BIC) were implemented to evaluate non-nested models. All models were estimated using CB-SEM (AMOS 24) with maximum likelihood and bias-corrected bootstrapping (5000 resamples, 95% confidence interval). (M2 > M1 > M3 > M4).

4. Discussion

4.1. Institutional Trust as a Structural Driver of Preparedness

The comparative structural analysis provides clear empirical evidence that institutional trust constitutes the primary determinant of preparedness for social responsibility (SR) implementation in financial cooperatives operating in an emerging market context. The Integrated Cognitive–Affective

Partial Mediation Model (M2) demonstrated superior fit and explanatory power relative to all competing specifications. The most significant finding was that institutional trust had a strong and statistically significant direct effect on preparedness ($\beta = 0.626$, $p < 0.001$), accounting for a substantial portion of the variance ($R^2 = 0.423$).

In organizational research, the magnitude of this coefficient is especially significant, as structural variables rarely exceed moderate effect sizes. The persistence of this effect across model comparisons, as well as its deterioration under full mediation constraints (M3), suggests that preparedness cannot be fully accounted for by cognitive or affective risk perception mechanisms alone. Rather, it seems that preparedness is structurally embedded within governance-based trust dynamics.

The Sequential Cognitive Full Mediation Model's rejection serves as confirmation that institutional trust functions as a direct governance stabilizer, rather than solely as a heuristic filter that influences risk appraisal. In cooperative financial systems, trust in regulatory authorities, management, boards, and assemblies appears to improve organizational alignment, reduce coordination costs, and fortify strategic implementation capacity. These findings advance prior literature by demonstrating that trust functions as an institutional infrastructure rather than solely a psychological moderator.

4.2. Complementary but Non-Dominant Role of Risk Perception

While the cognitive (probability and severity) and affective (worry) dimensions of risk perception contribute to explaining preparedness, their role is secondary relative to trust. The deterioration observed when removing the direct trust-preparedness path (M3 and M4) confirms partial rather than full mediation.

This implies that, in the context of Ecuadorian savings and credit cooperatives, preparedness for SR implementation is not primarily initiated by increased risk awareness. Rather, it is motivated by structural legitimacy and governance confidence. Institutional trust is not replaced by cognitive appraisal mechanisms, which refine and regulate implementation processes.

These discoveries provide a nuanced understanding of Protection Motivation Theory (PMT) in organizational setting. While PMT predicts that perceived probability and severity motivate protective behavior, our results indicate that in structured financial institutions with democratic governance, preparedness appears structurally anchored in governance legitimacy rather than reactively triggered by threat appraisal.

4.3. Reinterpreting the Positive Trust–Worry Relationship

Contrary to traditional affect heuristic expectations, institutional trust showed a small but positive association with worry ($\beta = 0.100$, $p < 0.001$). Rather than suggesting inconsistency, this outcome may indicate heightened institutional accountability and awareness.

In mature cooperative systems, a greater degree of trust in governance structures may increase the sensitivity to potential implementation failures. Employees who have confidence in their leadership may develop a more profound internalization of organizational responsibility, which may result in constructive concern rather than emotional distress. This interpretation is consistent with the idea that trust in high-reliability organizations does not lead to complacency, but rather encourages responsible engagement and vigilance.

Therefore, worry in this context may represent adaptive concern embedded within a culture of responsibility, rather than anxiety derived from institutional fragility. This reinterpretation extends risk-as-feelings theory by suggesting that affective responses within stable governance environments may function as reinforcing rather than destabilizing mechanisms.

4.4. Governance-Based Sustainability in Emerging Market Cooperatives

Institutional trust is the primary mechanism of governance-based sustainability, according to the results. Cooperative financial institutions depend significantly on internal governance legitimacy

in emerging markets that are marked by economic volatility and regulatory gaps. Trust serves as a risk-buffering architecture, organizational adhesive, and social capital.

Institutional confidence structurally supports the capacity for SR implementation, as evidenced by the robust direct trust–preparedness relationship. This serves to substantiate the argument that sustainability in cooperative finance is not solely determined by compliance or ESG metrics, but rather by the legitimacy of embedded governance. Additionally, the model comparison illustrates that the structural performance is inferior when the risk architecture is simplified (M4) or trust is reduced to a solely cognitive antecedent (M3). This emphasizes the integrative nature of cooperative resilience, in which governance, cognition, and affect are interacted within a hierarchical structure.

4.5. Theoretical Contributions

This study contributes to the literature in three primary ways:

First, it advances risk perception theory by demonstrating that institutional trust can operate as a dominant structural driver rather than merely a moderator of cognitive appraisal.

Second, it refines Protection Motivation Theory in organizational finance by showing that preparedness in cooperative institutions is governance-driven rather than threat-driven.

Third, it introduces a comparative SEM framework (M1–M4) that differentiates between direct, sequential, and parallel mediation effects, thereby offering a rigorous methodological contribution to sustainability research.

The study elucidates the architecture through which trust influences sustainable implementation processes in emergent market cooperatives by empirically rejecting full mediation and validating partial mediation. The rejection of both sequential and parallel full mediation models strengthens the internal validity of the governance-driven sustainability thesis.

4.6. International Comparative Perspective

The results of this study are significant in contrast to the international evidence from both commercial banking systems and cooperative sectors in developed economies. The relationship between risk perception and preparedness in conventional banking institutions, particularly in developed markets, is more compliance-driven. Regulatory pressure, capital adequacy frameworks, and external monitoring mechanisms play a dominant role in shaping sustainability strategies. In these situations, trust frequently functions as a reputational or market-based mechanism, rather than as an internal governance mechanism. ESG preparedness is frequently reported to be associated with formal risk management integration and market discipline in U.S. and European banking systems, rather than with internal institutional trust as a primary driver, according to empirical studies.

Conversely, research conducted on cooperative financial institutions in countries such as Tanzania, Germany, and Nepal suggests that governance legitimacy and member-based trust structures have a substantial impact on risk management outcomes. However, these studies typically emphasize social capital effects on credit discipline or financial stability rather than on structured preparedness for social responsibility implementation. The present findings extend this literature by demonstrating that, in the Ecuadorian cooperative system, institutional trust operates as a structural governance architecture that directly enhances preparedness, rather than merely moderating risk perception.

Additionally, emerging market evidence frequently indicates that people exhibit more precautionary behavior when they perceive a greater risk. However, the "risk perception paradox" was reinforced in this study, as the perceived probability did not lead to an increase in preparedness. The cooperative governance structure, which institutionalizes sustainability responsibilities through democratic participation, regulatory supervision (SEPS), and mandatory social balance reporting, may account for this divergence. In these circumstances, preparedness is less reactive to perceived threat and more ingrained in governance confidence.

In contrast to cooperatives in other emerging contexts, where trust primarily influences financial discipline, and to commercial banks in developed economies, where sustainability initiatives are

frequently market-incentivized, the Ecuadorian case demonstrates a unique governance-based sustainability configuration. Cooperative finance is a hybrid governance model in which sustainability capacity is internally institutionalized rather than externally imposed, as institutional trust functions not only as relational capital but also as a structural mechanism of organizational resilience.

4.7. Implications for Cooperative Risk Governance

The findings suggest that strengthening institutional trust—through transparency, participatory governance, and regulatory clarity—may enhance preparedness for SR implementation more effectively than risk-awareness campaigns alone.

For regulators such as SEPS, the results indicate that governance legitimacy and supervisory credibility are critical levers for enhancing institutional sustainability. For cooperative boards and managers, investing in trust-building mechanisms may yield stronger implementation outcomes than focusing exclusively on risk communication strategies.

In emerging markets, where institutional voids frequently undermine financial stability, governance-based trust appears to function as a resilience multiplier.

5. Practical Implications

5.1. Implications for Regulators (SEPS and Public Governance Bodies)

The findings suggest that institutional trust constitutes a structural lever for enhancing preparedness in the implementation of social responsibility (SR) strategies. For regulatory authorities such as the Popular and Solidarity Economy Superintendency (PSES), this implies that supervisory effectiveness should not be evaluated solely in terms of compliance enforcement, but also in terms of credibility, transparency, and perceived procedural fairness.

Given the strong direct effect of trust on preparedness ($\beta = 0.626$), regulatory bodies can enhance SR implementation indirectly by:

- Strengthening supervisory transparency and feedback mechanisms.
- Standardizing SR reporting frameworks across segments.
- Promoting participatory dialogue between regulators and cooperative boards.
- Ensuring consistency and predictability in regulatory decisions.

When supervisory institutions are perceived as competent and legitimate, cooperatives are more likely to develop structural readiness for SR implementation. Thus, regulatory credibility functions as a macro-level enabler of sustainable governance.

5.2. Implications for Cooperative Boards and Top Management

For cooperative boards and executive management, the results highlight that preparedness for SR implementation is governance-driven rather than fear-driven. Risk-awareness campaigns alone are insufficient to strengthen implementation capacity.

Instead, boards should:

- Institutionalize SR policies within strategic planning cycles.
- Integrate sustainability indicators into operational and financial reporting systems.
- Encourage transparency in internal governance to strengthen employee trust.
- Develop transparent accountability frameworks for the performance of social responsibility.

The positive correlation between trust and anxiety ($\beta = 0.100$) implies that institutional confidence can coexist with moderate concern. When embedded in trusted governance environments, management should interpret employee concern as constructive engagement, rather than resistance.

5.3. Implications for Organizational Culture and ESG Implementation

The evidence indicates that preparedness is anchored in structural governance capacity rather than emotional activation. Therefore, organizations seeking to enhance ESG performance in emerging markets should prioritize:

- Governance legitimacy.
- Decision-making clarity.
- Procedural transparency.
- Long-term strategic alignment.

This reinforces the idea that sustainability is not merely a reporting exercise, but a governance architecture supported by institutional trust.

6. Limitations and Future Research

Despite its contributions, this study presents several limitations.

First, the cross-sectional design restricts causal inference. Although the structural model supports directional hypotheses, longitudinal data would allow stronger temporal validation of trust-preparedness dynamics.

Second, the study relies on self-reported perceptions. While Harman’s single-factor test indicated no substantial common method bias, perceptual data may be influenced by social desirability or organizational culture effects.

Third, linear CB-SEM is predicated on the assumption of linear relationships between constructs. Potential non-linear effects are suggested by prior theoretical models, such as the EPPM and risk perception paradox frameworks, particularly in the relationship between anxiety and preparedness. Quadratic or moderated specifications may be investigated in future research.

Fourth, the context is restricted to savings and credit cooperatives in Ecuador. While this contributes to contextual profundity, replication is necessary to ensure generalizability to other emerging markets or financial institutions.

Finally, although model comparison (M1–M4) strengthens robustness, alternative theoretical specifications—such as reciprocal trust-preparedness dynamics—could be examined in future studies.

7. Conclusions

This section is not mandatory but can be added to the manuscript if the discussion is unusually long or complex.

This study demonstrates that institutional trust operates as a dominant structural mechanism in explaining preparedness for social responsibility implementation within financial cooperatives in an emerging market context.

Comparative structural modeling confirms that preparedness cannot be fully explained by cognitive or affective risk perception mechanisms. The rejection of full mediation models (M3 and M4) and the superior performance of the integrated partial mediation model indicate that trust functions not merely as a perceptual filter, but as a governance-based stabilizer.

The strong direct effect of trust on preparedness ($\beta = 0.626$; $R^2 = 0.423$) underscores that sustainable implementation capacity in cooperative finance is anchored in institutional legitimacy and governance credibility. The cognitive and affective dimensions of risk perception function as complementary mechanisms; however, they do not serve as a substitute for structural trust.

The architecture through which institutional trust molds organizational resilience in emerging markets is clarified by these findings, which contribute to governance-based sustainability research. Sustainable performance in cooperative financial systems appears to be structurally embedded in governance trust, rather than predominantly activated through threat perception.

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Appendix A

Appendix A.1

Five latent variables were analyzed with 16 observed variables (Table A1). A 16-question questionnaire was presented to the informants for data collection (Table A2).

Table A1. Variables definition.

Variable	Item	Code
Trust		Trust
Level of trust in the institution, its management bodies, and authorities for the application of social responsibility policies, strategies, or actions in the cooperative.	Trust in the Assembly and Boards to resolve any issues that may arise in the implementation of social responsibility policies, strategies, or actions in the cooperative.	Trust01
	Trust in the President and Management to resolve any issues that may arise in the implementation of social responsibility policies, strategies, or actions in the cooperative.	Trust02
	Trust in external organizations to resolve any issues that may arise in the implementation of social responsibility policies, strategies, or actions within the cooperative.	Trust03
Probability		Prob
Probability of a risk occurring during the implementation of social responsibility policies, strategies, or actions.	Probability that, implementing social responsibility policies, strategies, or actions in the cooperative, will not guarantee trust, ethics, and transparency in governance.	Prob01
	Probability that, implementing social responsibility policies, strategies, or actions in the cooperative, will not achieve the desired economic, social, and environmental coverage.	Prob02
	Probability that, when implementing social responsibility policies, strategies, or actions in the cooperative, the desired level of application of advanced and sustainable technologies will not be achieved.	Prob03
Severity		Sever01
Severity of the impact when a risk arises in the	The impact of failing to ensure trust, ethics, and transparency in governance when implementing social responsibility policies, strategies, or actions in the cooperative.	Sever01

implementation of social responsibility policies, strategies, or actions.	The impact of failing to achieve the desired economic, social, and environmental coverage when implementing social responsibility policies, strategies, or actions in the cooperative.	Sever02
	The impact of failing to achieve the desired level of application of advanced and sustainable technologies when implementing social responsibility policies, strategies, or actions in the cooperative.	Sever03
Worry		Worry
Level of concern regarding a risk during the implementation of social responsibility policies, strategies, or actions.	Worry that the cooperative's established social responsibility policies, strategies, or actions are not being implemented.	Worry01
	Worry that the cooperative's established social responsibility policies, strategies, or actions are being partially or inadequately implemented.	Worry02
	Worry that the cooperative's incorrect social responsibility policies, strategies, or actions are being implemented.	Worry03
Preparedness		Prep
Level of preparedness for the implementation of social responsibility policies, strategies, or actions.	Effectiveness of the cooperative's strategic objectives, plans, and projects in the economic, financial, social, and environmental spheres.	Prep01
	Identification and satisfaction of the essential needs of the target social market as part of its social responsibility.	Prep02
	Effectiveness of the policies implemented by the cooperative in fulfilling its social responsibility.	Prep03
	Inclusion of social responsibility actions in the financial reports generated by the cooperative.	Prep04

Table A2. Survey.

Code	Question
Trust	What is the level of confidence in resolving any issues that may arise in the application of social responsibility policies, strategies, or actions within the cooperative, as generated by the following authorities and bodies?
Trust01	Assembly and Councils
Trust02	Presidency and Management
Trust03	Popular and Solidarity Economy Superintendency (PSES) and other external bodies
Probability	What is the probability level that the following conditions will occur when applying social responsibility policies, strategies, or actions in the cooperative?
Prob01	The cooperative's governance does not guarantee trust, ethics, and transparency.
Prob02	The cooperative fails to achieve the intended economic, social, and environmental impact.
Prob03	The desired level of application of advanced and sustainable technologies is not achieved.
Severity	What is the severity level of the following conditions when applying social responsibility policies, strategies, or actions in the cooperative?
Sever01	The cooperative's governance does not guarantee trust, ethics, and transparency.
Sever02	The cooperative fails to achieve the intended economic, social, and environmental impact.
Sever03	The desired level of application of advanced and sustainable technologies is not achieved.

Worry	What level of concern do the following options cause you in relation to the application of the social responsibility policies, strategies, or actions established by the cooperative?
Worry01	Do not apply.
Worry02	Apply partially or inadequately.
Worry03	Apply incorrect policies, strategies, or actions.
Preparedness	
Prep01	To what extent do the cooperative's strategic objectives, plans, and projects encompass the economic, financial, social, and environmental spheres?
Prep02	To what extent does the cooperative identify and meet the essential needs of its target social market (education, health, safety, recreation, housing, and others) as part of its commitment to protecting and promoting human rights?
Prep03	To what extent are the cooperative's policies effective regarding safety, health, the promotion of fair and equitable labor relations, gender equality, and diversity?
Prep04	To what extent do the economic reports generated consider the social and environmental actions undertaken by the cooperative?

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