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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 is associated with preparedness for social responsibility (SR) implementation in Ecuadorian savings and credit cooperatives. Using covariance-based structural equation modeling (CB-SEM) with 5000 bootstrap resamples (n = 2116), we assessed four competing structural models comparing direct, sequential, and parallel mediation pathways. The findings demonstrate that institutional trust has a significant direct impact on preparedness ($\beta = 0.626$, $p < 0.001$), accounting for 42.3% of its variance. The statistical rejection of full mediation models validates that readiness cannot be exclusively elucidated through cognitive or affective risk perception pathways. Notably, the study uncovers a "Trust Paradox": contrary to the conventional "trust-as-control" heuristic, trust exhibited a significant positive correlation with both severity perception ($\beta = 0.200$, $p < 0.001$) and worry ($\beta = 0.100$, $p < 0.001$). This suggests that in high-reliability cooperative contexts, trust appears to function primarily as a validator of information credibility rather than a mitigator of threat magnitude. While the affective pathway was significant, its effect size was modest compared to the direct governance effect. These results indicate that preparedness for SR implementation in cooperative finance is driven more by governance legitimacy than by threat perception. The study enhances sustainability research by recognizing institutional trust as a fundamental structural driver of organizational resilience and vigilant preparedness in emerging market financial cooperatives.

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

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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 undergone significant transformations 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] (pp. 4–95). 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, 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, evidence from other emerging markets, such as the Nepalese cooperative sector, serves as an international comparative example of the fundamental relationship between governance structures and credit default risk, leverage risk, liquidity risk, and investment risk [22]. Although this study focuses specifically on Ecuador, the Nepalese case demonstrates the universal significance of sound governance frameworks in cooperative risk management across diverse emerging market contexts, thereby supporting the relevance of examining these dynamics in the Ecuadorian cooperative financial system.

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. SR is fundamental, rendering the efficient implementation of SR not merely an option but an existential imperative [28]. However, the implementation of 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].

Previous research has also shown that trust is essential for cooperative finance [31,32] 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 [33–35] 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.

The Ecuadorian cooperative financial system is composed of substantial financial cooperatives that facilitate community development and ensure universal financial access [36]. It is crucial to comprehend the methods by which these cooperatives mitigate the risks associated with SR in order to maintain their operations and contribute to the growth of the local economy.

Consequently, this study makes four specific contributions to the literature. First, theoretically, it advances risk perception theory by demonstrating that institutional trust operates as a dominant structural driver of preparedness rather than merely a moderator of cognitive appraisal. Second, contextually, it addresses an empirical gap by examining these dynamics within financial cooperatives in emerging markets, specifically Ecuador, where institutional voids and governance challenges create unique risk profiles. Third, methodologically, it introduces a comparative structural equation modeling framework (M1–M4) that differentiates between direct, sequential, and parallel mediation pathways, offering rigorous tests of competing theoretical specifications. Fourth, practically, it provides actionable insights for regulators (PSES) and cooperative managers on how governance trust can be leveraged to enhance SR implementation preparedness more effectively than risk-awareness campaigns alone.

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 SR in financial cooperatives in emerging markets. It evaluates an 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 [37], in his risk perception theory (RPT), 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 [38]. 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) [39]. 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 [40–42].

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 [42] 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 [43]. 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 [44]. 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—PMT) [45–48]. 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. [49] demonstrate that the integration of a risk management culture into a 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 [50]. For example, in international construction projects, Dang et al. [50] 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. [51] 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, the recent literature from both developed and emergent countries substantiates the notion that institutional trust and 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. [49] and Pérez-Campdesuñer et al. [52] 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, and 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

While the relationships between probability, severity, worry, and preparedness have been extensively studied in disaster risk, health behavior, and environmental contexts, their examination within financial cooperatives in emerging markets offers unique theoretical insights. First, unlike individual-level risk contexts (e.g., natural disasters and health threats), SR implementation in cooperatives involves organizational-level preparedness where employees act as agents of the institution rather than as individuals protecting themselves. This shifts the motivational dynamics from self-efficacy to collective-efficacy and institutional trust. Second, emerging market cooperatives operate under conditions of institutional voids [19], regulatory ambiguity, and economic volatility that create distinctive risk profiles not present in developed market contexts. Third, the democratic governance structure of cooperatives, where employees often have dual roles as workers and member-owners, creates complex trust dynamics that differ from hierarchical banking institutions. Fourth, the dual mission of cooperatives (business sustainability and social development) generates unique tensions between financial performance and social responsibility that may moderate how risk perceptions translate into preparedness. These contextual factors suggest that established risk perception relationships may operate differently in this setting, warranting empirical examination rather than simple replication.

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. [53]; Han et al. [54]; Siegrist and Árvai [55]; Siegrist et al. [56]; and Bonfanti et al. [44] 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 [57]. 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.*

The relationship between trust and severity perception is theoretically complex and context-dependent, exhibiting potential bidirectionality. On the one hand, a dominant-negative relationship is observed, in which trust serves as a heuristic for safety and control. In this view, increased institutional trust leads to a decrease in perceived severity, as individuals rely on the assumption that risks are being effectively managed or mitigated by trusted authorities. Empirical evidence supports this "trust-as-control" mechanism; for instance, Siegrist, Gutscher, and Earle [58] demonstrated that trust leads people to perceive technological risks as less serious, while Bonfanti et al. [44] found that communities with higher trust in public institutions reported lower expected severity of damage from natural hazards.

On the other hand, a positive relationship may emerge when trust functions primarily as a validator of information credibility rather than a guarantor of safety. As Breakwell [35] argues, increased trust in information sources can paradoxically heighten perceived severity when those sources effectively communicate the magnitude of potential consequences. In this scenario, high trust ensures that warning messages are accepted as accurate and credible, thereby amplifying the perceived threat rather than diminishing it. While indexed studies specifically linking trust in internal authorities to increased severity perceptions remain scarce, the theoretical possibility suggests that the direction of the relationship depends on whether trust is anchored in the capacity to mitigate risk (leading to lower severity perceptions) or in the credibility of the warning (leading to higher severity perceptions). Given the prevailing evidence in cooperative SR contexts suggesting that trust generally fosters a sense of security and risk reduction, we propose the following hypothesis: "Trust is negatively related to severity perception."

Although theoretical arguments exist for a positive association driven by information credibility [35], the preponderance of empirical evidence in disaster risk and technology acceptance suggests that trust primarily functions as a mechanism of reassurance and perceived control. Therefore, we posit that in the context of cooperative SR, the mitigating effect of trust will dominate.

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

The theoretical framework supporting this relationship was identified using PMT, proposed by Rogers [45]. This theory posits that trust increases perceived self-efficacy and the willingness to prepare for risks. Kesanta et al. [49] 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. [52] 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 [59]. Wachinger et al. [60] and Bonfanti et al. [44] 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 [56]. 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 negatively related to worry perception.*

Worry is an affective response to a perceived threat, and trust is theoretically expected to moderate anxiety rather than amplify it. The relationship between trust and emotional worry is well-supported by the "affect heuristic" theory [61], which posits that positive feelings associated with trust systematically reduce negative emotions, such as worry. Similarly, Slovic et al. [33] demonstrated that trust in institutions primarily influences affective responses, helping to attenuate fear and distress derived from risk contemplation [26,41,55,62]. Based on these theoretical foundations, we anticipate that higher levels of institutional trust will correspond to lower levels of emotional distress.

H5. *Probability is positively related to severity perception.*

Classical risk models, such as the Health Belief Model (HBM), PMT, and the Extended Parallel Process Model (EPPM), analyze probability and severity as independent assessments, where one does not influence the other [45,46,63]. Others, in seeking to relate them, have not found a consistent causal relationship between the two dimensions [64]. On the contrary, in contexts other than social responsibility (SR), Slovic [37] and subsequent studies assume that these variables are interrelated. Similarly, Tómas-Cardoso et al. [40] 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.*

PMT posits that a high perceived probability of a threat is one of the factors that motivates the adoption of protective behaviors [44]. In the context of the pandemic, Sharabani & Garyn-Tai [42] found that a higher perceived probability of infection drove preparedness. Lindell & Perry [65] and Bubeck et al. [66] 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. [67] and Zhou et al. [41] found similar results in different contexts. The finding by Keel et al. [68] 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 [69] 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) [70]. This aligns with the findings of Shiloh et al. [67] 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 [35], Tómas-Cardoso et al. [40], and Zhou et al. [41]. 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, PMT suggests that higher levels of worry should increase preparedness [45]. However, the literature has also identified nonlinear and contextual effects in this relationship. In this regard, Sjöberg et al. [34] 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 [42] found 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.

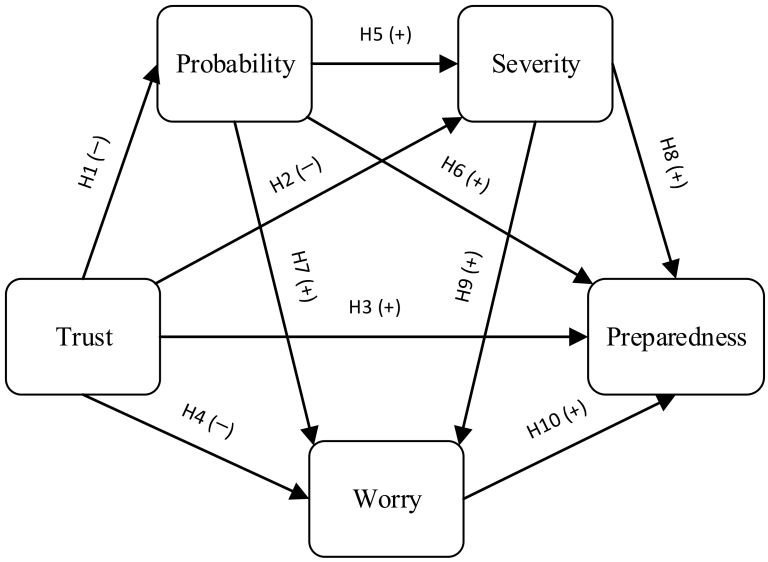


Figure 1. The proposed conceptual model; it summarizes the hypotheses raised.

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) [36], 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 [71]. SCCs account for almost 30% of the national financial system [72] 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 [72,73]. This distinguishes them from conventional financial institutions.

This study was conducted in 19 SCCs 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 [23,74].

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 [25,74]. 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 SCCs 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.

All 19 cooperatives agreed to participate, representing a 100% institutional participation rate. A total of 10,164 employees were invited to participate across the 19 cooperatives. Of the 10,164 invitations sent, 2116 completed surveys were received, yielding a 20.82% response rate. 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.

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.

A non-response bias analysis was performed comparing the first respondents (n = 1058) with the last respondents on key demographic variables. No significant differences were found in age ($\chi^2(7) = 9.619$, $p = 0.211$), gender ($\chi^2(2) = 5.498$, $p = 0.064$), or role ($\chi^2(2) = 5.181$, $p = 0.075$). These results suggest that non-response bias is probably not a major problem in this study [75].

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 PSES technical experts to ensure 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.

Given the purposive sampling strategy focused on large cooperatives (assets > USD 500 million), the findings should be generalized with caution to smaller cooperatives or other types of financial institutions in emerging markets. The results are most applicable to well-established, medium-to-large savings and credit cooperatives operating under similar regulatory frameworks.

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 measurement items were developed through a systematic process combining adaptation of established scales and context-specific item generation. The trust construct items were adapted from Mayer and Davis (1999) and Schoorman et al.'s [11] organizational trust scales. The probability and severity items were developed based on Slovic's [37] psychometric paradigm and Protection Motivation Theory [45]. Worry items were adapted from the affective risk perception measures used by Loewenstein et al. [70] in the risk-as-feelings

framework. Preparedness items were developed specifically for this study based on organizational readiness literature [76], as no validated scale existed for SR implementation preparedness in cooperative contexts.

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), and 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 parallel to those of probability (Sever01–Sever03) (Table 1). 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).

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

Note: n = 2116 (response rate = 20.82% from 10,164 invitations across 19 cooperatives).

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 (Table 2). 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.

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.

To mitigate common method bias procedurally, we employed the following strategies during data collection: (a) psychological separation of predictor and criterion variables by presenting them in different sections of the survey; (b) assurance of respondent anonymity to reduce evaluation apprehension; (c) counterbalancing question order where feasible; and (d) use of different scale formats and anchors for independent and dependent variables.

All constructs were specified as reflective rather than formative based on theoretical and empirical considerations [78]. In reflective models, the latent construct causes the observed indicators, which are expected to covary and be interchangeable. This specification is appropriate because: (a) the items for each construct represent manifestations of the underlying latent variable rather than defining characteristics; (b) the items are expected to share a common theme and demonstrate internal consistency; (c) dropping an item would not alter the conceptual domain of the construct; and (d) the direction of causality flows from the latent construct to the indicators.

2.4. Structural Model Specification and Estimation Methodology

Although maximum likelihood (ML) estimation assumes multivariate normality, prior research has demonstrated that ML with bias-corrected bootstrapping provides robust parameter estimates and standard errors even with non-normal data, particularly with large sample sizes ($n > 200$), as in the present study [79,80]. The bootstrapping procedure (5000 resamples) generates empirical sampling distributions that do not rely on normality assumptions, thereby providing more accurate confidence intervals and significance tests. Additionally, CB-SEM with ML estimation was retained to facilitate model comparison using chi-square difference tests and information criteria (AIC/BIC), which are not available with alternative estimators such as asymptotically distribution-free (ADF) methods. We conducted a robustness assessment by examining multivariate kurtosis critical ratios, which indicated moderate non-normality; bootstrapping adequately addresses this issue.

To examine the psychosocial mechanisms through which institutional trust influences preparedness for SR implementation, four competing structural equation models (SEM) were specified and compared. This comparative approach allows for rigorous testing of direct, sequential, and parallel mediation hypotheses while evaluating the relative explanatory power of different theoretical specifications.

M1 (Direct Governance Model): This baseline model tests the direct effect of institutional trust on preparedness without incorporating mediating mechanisms through risk perception dimensions. This specification assumes that trust operates as a standalone governance driver, independent of cognitive or affective risk appraisal processes.

M2 (Full Integrated Partial Mediation Model): This comprehensive model incorporates both direct effects of trust on preparedness and indirect effects through cognitive (probability and severity) and affective (worry) risk perception pathways. The model specifies sequential relationships among risk perception dimensions (probability → severity → worry) while maintaining the direct trust–preparedness path, allowing for partial mediation testing.

M3 (Sequential Cognitive Full Mediation Model): This specification constrains the direct path from trust to preparedness to zero, testing whether trust operates exclusively through sequential cognitive mediation pathways (trust → probability → severity → preparedness). This model evaluates whether risk perception mechanisms fully account for the trust–preparedness relationship.

M4 (Parallel Mediation Full Mediation Model): Similar to M3, this model constrains the direct effect to zero but specifies parallel rather than sequential mediation pathways through probability, severity, and worry. This tests whether multiple independent mediators, rather than a sequential chain, explain the relationship between trust and preparedness.

Model Comparison Strategy: Nested model comparisons were conducted using chi-square difference tests ($\Delta\chi^2$) with corresponding degrees of freedom. Meaningful variations in model fit were interpreted using the following criteria: ΔCFI ≥ 0.01, ΔRMSEA ≥ 0.015, and statistical significance of $\Delta\chi^2$ ($p < 0.05$). Non-nested models were compared using information criteria (AIC and BIC), with lower values indicating superior model fit.

Estimation Procedure: All models were estimated using covariance-based structural equation modeling (CB-SEM) in AMOS 24 with maximum likelihood estimation. Given the non-normal distribution of the data, bias-corrected bootstrapping with 5000 resamples and 95% confidence intervals was employed to obtain robust standard errors and significance tests. Model fit was evaluated using multiple indices: χ^2/df (<3.0), CFI (>0.95), TLI (>0.95), RMSEA (<0.06), and SRMR (<0.08).

Prior to structural model estimation, multicollinearity among the predictor constructs (trust, probability, severity, and worry) was assessed to ensure the stability of the parameter

estimates. A linear regression diagnostic was conducted in SPSS v.28 with collinearity statistics enabled. The results indicated variance inflation factor (VIF) values ranging from 1.060 to 1.112 and tolerance values exceeding 0.89 for all predictors, well within the conservative thresholds of VIF < 5 and tolerance > 0.10 recommended by Hair et al. [81]. Furthermore, the maximum Condition Index was 18.561, remaining below the critical threshold of 30 that would indicate severe collinearity [82]. An examination of variance proportions on the critical dimension revealed that no pair of predictors simultaneously shared more than 50% of their variance, ruling out degenerate linear dependencies. Bivariate correlations between predictor constructs ranged from $|r| = 0.104$ to 0.247, confirming empirical independence. Collectively, these diagnostics validate the numerical stability of the structural coefficients and support the independent interpretation of the direct and indirect effects reported in the model (refer to Table A3).

3. Results

3.1. Descriptive Analysis

Missing data were 0% for all items. All elements showed skewness and kurtosis values outside acceptable ranges; the data do not 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 $\nabla = 0.001$; H2 and H4 $\nabla = 0.011$; H3 $\nabla = 0.024$; H5 $\nabla = 0.006$; H6 $\Delta = 0.006$; H7 $\nabla = 0.006$; H8 $\Delta = 0.009$; H9 $\nabla = 0.008$; H10 $\nabla = 0.007$; 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), and the outliers identify a specific extreme valuation of the informants' perception; 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 [83].

Following Podsakoff et al.'s [84] recommendations, we conducted an unmeasured latent method factor test. A common method factor was added to the measurement model, with all indicators loading on their theoretical constructs and on a latent common method variance factor. The comparison of standardized regression weights between the baseline model and the method factor model revealed that the average substantive variance (0.782) was substantially higher than the average method variance (0.034), with a ratio of approximately 23:1. Additionally, all method factor loadings were non-significant ($p > 0.05$). These results suggest that common method bias is unlikely to be a serious concern in this study.

3.2. Reliability and Validity

The standardized loading for Prep01 (0.690) was lower than that of other indicators but remained above the recommended threshold of 0.60 [81]. This item ("Effectiveness of the cooperative's strategic objectives, plans, and projects in the economic, financial, social, and environmental spheres") captures a broader, more comprehensive aspect of preparedness compared to the other items, which may explain its slightly lower loading. Despite the lower loading, Prep01 was retained because: (a) it contributes unique content validity by addressing the strategic dimension of preparedness; (b) its removal would not

substantially improve composite reliability (CR = 0.861); and (c) the construct maintains adequate convergent validity (AVE = 0.608 > 0.50).

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 (Figure 2).

Table 4. Structural equation model (SEM): model fit summary and parameter estimates.

Hyp.	Causal Relationships	Stand. Coeff.	*p*-Value	Decision
H1	Trust → Probability	−0.123	***	Supported
H2	Trust → Severity	0.200	***	Not Supported
H3	Trust → Preparedness	0.626	***	Supported
H4	Trust → Worry	0.100	***	Not Supported
H5	Probability → Severity	0.188	***	Supported
H6	Probability → Preparedness	−0.077	***	Not 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; χ^2/df = 2455.				
CFI = 0.996; IFI = 0.996; TLI = 0.995; NFI = 0.993; RMSEA = 0.026; SRMR = 0.0160.				

Note: * $p < 0.05$; *** $p < 0.001$; 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; SRMR = Standardized Root Mean Square Residual.

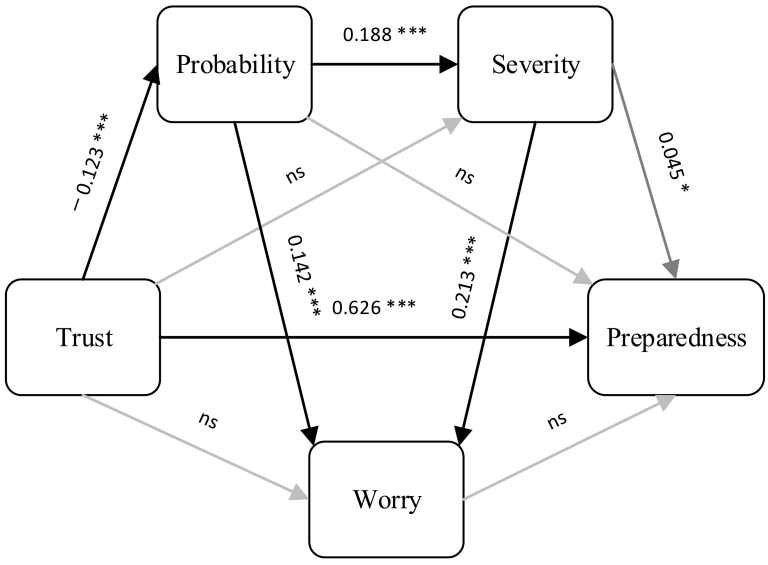


Figure 2. Conceptual model: graphical description with estimated parameters. Note: * $p < 0.05$; *** $p < 0.001$; *ns* = not significant.

Ten hypotheses were proposed based on theoretical foundations. While nine relationships were statistically significant, the directionality of three key hypotheses diverged from initial expectations. Specifically, while H1 (trust → probability) was supported as negative ($\beta = -0.123$; $p < 0.001$), H2 (trust → severity) revealed a significant positive relationship ($\beta = 0.200$; $p < 0.001$), leading to its rejection. Similarly, H4 (trust → worry) was supported

in terms of significance but showed a positive coefficient (β = 0.100; $p < 0.001$), contrary to the hypothesized negative affect heuristic. Additionally, H6 (probability → preparedness) was hypothesized as positive but exhibited a significant negative coefficient (β = −0.077; $p < 0.001$), also leading to its rejection. The only non-significant result was H10 (worry → preparedness). These counterintuitive findings regarding severity, worry, and probability are critical and are addressed in detail in the Section 4.

3.4. Structural Model Comparison

The comparative analysis of the four competing structural models (specified in Section 2.4) was conducted using chi-square difference tests for nested models and information criteria (AIC/BIC) for non-nested comparisons. The results are presented in Tables 5 and 6.

Table 5. Comparative fit indices and explanatory power across competing structural models.

Model	χ^2	df	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 (Partial Mediation)	230.801	94	2.455	0.996	0.995	0.026	0.0160	314.801	552.407	0.423
M3 Sequential Cognitive (Full Mediation)	1084.471	62	17.491	0.960	0.949	0.088	0.1728	1142.471	1306.532	0.021
M4 Parallel Mediation (Full Mediation)	1223.516	98	12.485	0.965	0.957	0.074	0.1433	1331.516	1514.493	0.066

Note: All models were estimated using covariance-based structural equation modeling (CB-SEM) in IBM AMOS 24.0 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 6. Chi-square difference tests and incremental fit comparisons.

Comparison	$\Delta\chi^2$	Δdf	*p*-Value	ΔCFI	ΔRMSEA	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).

The Full Integrated Model (M2) demonstrated significantly superior fit compared to the Direct Governance Model (M1), $\Delta\chi^2(81) = 189.049$, $p < 0.001$, supporting the inclusion of mediating mechanisms through risk perception dimensions. Although the change in CFI was minimal (ΔCFI = −0.001), M2 explained 42.3% of the variance in preparedness compared to 41.5% in M1 (Table 5).

Testing full mediation constraints revealed substantial model deterioration. When the direct path from trust to preparedness was eliminated in the Sequential Cognitive Full Mediation Model (M3), fit indices declined markedly compared to M2, $\Delta\chi^2(32) = 853.670$,

$p < 0.001$, $\Delta CFI = -0.036$. Similarly, the Parallel Mediation Model (M4) showed significant fit loss relative to M2, $\Delta\chi^2(4) = 992.715$, $p < 0.001$, with a meaningful decrease in CFI ($\Delta CFI = -0.031$) and elevated RMSEA (0.074 vs. 0.026).

The non-nested comparison between M3 and M4 via information criteria revealed marginal differences, with M3 showing slightly lower AIC/BIC values. However, both full mediation models exhibited substantially inferior explanatory power ($R^2 = 0.021$ for M3; $R^2 = 0.066$ for M4) compared to the partial mediation specification ($R^2 = 0.423$).

Overall, the results provide strong empirical support for the Partial Mediation Model (M2) as the most theoretically coherent and empirically robust structural specification, confirming that institutional trust operates through both direct governance mechanisms and indirect risk perception pathways.

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 ($R^2 = 0.423$). However, the role of trust in shaping risk perceptions proved more complex than traditional models suggest, particularly regarding severity and emotional worry.

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 appears to be structurally embedded within governance-based trust dynamics.

The Sequential Cognitive Full Mediation Model's rejection serves as confirmation that institutional trust may function 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 the prior literature by demonstrating that trust functions as a driver rather than solely a psychological moderator.

4.2. Complementary but Non-Dominant Role of Risk Perception

Contrary to H6's expectation, perceived probability showed a small but significant negative relationship with preparedness ($\beta = -0.077$, $p < 0.001$). This finding reinforces the "risk perception paradox" wherein in high-trust cooperative environments with strong governance structures, employees do not rely on threat probability assessments to drive preparedness. Instead, preparedness is structurally embedded in governance trust ($\beta = 0.626$), suggesting that institutional confidence supersedes reactive threat-based motivation.

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.

Complementary but Non-Dominant Role of Risk Perception

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 PMT in an 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. The Paradox of Trust: Validation vs. Mitigation

Contrary to our hypotheses (H2 and H4) and the traditional "trust-as-control" heuristic [58], our results indicate that higher institutional trust is associated with higher perceptions of severity ($\beta = 0.200$) and higher levels of worry ($\beta = 0.100$). This finding challenges the assumption that trust always acts as an anxiety-reducing buffer. Instead, it supports the alternative perspective proposed by Breakwell [35] and recent studies on risk communication, suggesting that in high-reliability organizations, trust functions as a validator of information credibility.

In the context of Ecuadorian financial cooperatives, employees who trust their governance bodies may be more attentive to internal communications regarding social responsibility risks. Consequently, they accept the severity of these risks as credible rather than dismissing them. Furthermore, the positive link between trust and worry suggests a mechanism of "responsible vigilance" rather than distress. Employees in trusted environments may feel a greater sense of ownership and accountability, leading to constructive concern about potential implementation failures. This aligns with the notion that trust does not lead to complacency but rather fosters a culture where risks are acknowledged seriously because the institution is trusted to manage them transparently.

4.4. The Validation Mechanism: Reconciling the Positive Trust–Severity Link

Perhaps the most theoretically significant finding of this study is the rejection of Hypothesis H2, revealing a robust positive relationship between institutional trust and severity perception ($\beta = 0.200$). This result directly challenges the conventional "trust-as-control" heuristic, which posits that confidence in authorities should lead to the minimization of risk magnitude [44,58]. Instead, our data aligns with the alternative perspective proposed by Breakwell [44], suggesting that in high-reliability organizational contexts, trust functions primarily as a validator of information credibility.

In the specific environment of Ecuadorian financial cooperatives, employees who possess high levels of trust in their governance bodies (assemblies, boards, and regulators) are more likely to accept internal communications regarding social responsibility risks as accurate and credible. Rather than dismissing potential threats as exaggerated or unlikely—a behavior common in low-trust environments where skepticism acts as a defense mechanism—trusted employees internalize the gravity of the consequences. Consequently, trust does not blind stakeholders to the severity of risks; rather, it removes the cognitive filters of denial, allowing for a clearer and more serious assessment of potential impacts.

This phenomenon can be interpreted as a shift from complacent trust to vigilant trust. In mature cooperative systems characterized by democratic governance and transparency, trust fosters a culture where risks are acknowledged seriously precisely because the institution is trusted to manage them transparently. If the institution communicates that a failure in SR implementation could have severe reputational or financial consequences, high-trust

employees believe this assessment. Conversely, in low-trust settings, even severe warnings might be discounted as political maneuvering or incompetence, leading to an artificially lowered perception of severity.

Therefore, the positive coefficient observed indicates that institutional trust amplifies the perceived magnitude of risks by validating the source of the warning. This finding refines PMT in organizational settings: while trust reduces the perceived probability of occurrence (as supported by H1), it simultaneously increases the perceived severity of the outcome. This dual role suggests that trust creates a psychological state of "prudent alertness", where individuals feel secure enough to confront the true magnitude of potential threats without becoming paralyzed by fear, ultimately channeling this awareness into the high levels of preparedness observed in our model ($\beta = 0.626$).

4.5. The Counterintuitive Probability–Preparedness Relationship

Contrary to H6's hypothesis and PMT expectations, perceived probability exhibited a small but statistically significant negative relationship with preparedness ($\beta = -0.077$, $p < 0.001$). This finding, while unexpected, aligns with emerging evidence on the "risk perception paradox" [60], wherein heightened risk awareness does not necessarily translate into protective action. Several alternative interpretations merit consideration:

First, in high-trust cooperative environments characterized by strong governance structures, employees may delegate preparedness responsibilities to institutional authorities rather than engaging in individual threat-based calculations. This "delegation effect" suggests that when trust is high ($\beta = 0.626$ for the direct trust–preparedness path), cognitive risk assessments (probability and severity) become less relevant drivers of preparedness behavior.

Second, the negative coefficient may reflect a crowding-out effect, wherein excessive focus on threat probability undermines intrinsic motivation for preparedness. Employees who perceive a high probability of SR implementation failures may experience learned helplessness or fatalism, reducing their sense of personal agency to influence outcomes.

Third, measurement timing may explain this relationship. As a cross-sectional study, we captured perceptions at a single point in time. It is possible that employees in cooperatives with lower preparedness levels retrospectively attribute this to a higher perceived probability of risks, creating a reverse causal pattern.

Fourth, the cooperative governance structure, which institutionalizes sustainability responsibilities through democratic participation, regulatory supervision (PSES), and mandatory social balance reporting, may render preparedness less reactive to perceived threat and more ingrained in governance confidence. This structural embeddedness of preparedness aligns with our finding that trust, rather than threat perception, is the primary driver.

These interpretations remain speculative, given the cross-sectional design, and should be tested in future longitudinal research. The findings underscore the importance of distinguishing between threat-driven preparedness (individual-level, reactive) and governance-driven preparedness (organizational-level, proactive), with the latter appearing dominant in mature cooperative systems.

4.6. 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 interact within a hierarchical structure.

4.7. 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 PMT 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.

Fourth, it provides actionable insights for regulators (PSES) and cooperative managers on how governance trust can be leveraged to enhance SR implementation preparedness more effectively than risk-awareness campaigns alone.

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.

4.8. 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. Contrary to PMT expectations and H6's hypothesis, perceived probability showed a small but significant negative relationship with preparedness ($\beta = -0.077$, $p < 0.001$). This finding aligns with Wachinger et al.'s [60] risk perception paradox, wherein heightened risk awareness does not necessarily trans-

late into protective action, particularly in high-trust institutional environments. The cooperative governance structure, which institutionalizes sustainability responsibilities through democratic participation, regulatory supervision (PSES), 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. This suggests that in mature cooperative systems with strong regulatory oversight, employees delegate preparedness responsibilities to institutional authorities rather than engaging in individual threat-based calculations. This "delegation effect" represents a fundamental departure from individual-level risk models and underscores the importance of distinguishing between threat-driven preparedness (individual-level, reactive) and governance-driven preparedness (organizational-level, proactive), with the latter appearing dominant in the Ecuadorian cooperative context.

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.

4.9. 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 PSES, 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 (PSES 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 is governance-driven. Crucially, the positive association between trust, severity perception, and worry suggests that leaders should not aim to minimize risk awareness to reduce anxiety. Instead, fostering trust allows for transparent communication about the severity of SR challenges without causing paralysis. Managers should interpret employee worry not as resistance, but as a sign of engaged accountability. Therefore, 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, and perhaps even stimulate, constructive concern. When embedded in trusted governance environments, this concern acts as a motivator for readiness rather than a barrier.

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 nonlinear 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 study demonstrates that institutional trust appears to operate 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; notably, trust appears to amplify the perceived severity and urgency (worry) of risks, which in turn coexist with high preparedness. This evidence confirms the "Trust Paradox" as a key theoretical contribution, challenging the conventional view that trust solely reduces threat appraisal.

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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Institutional Review Board Statement: Ethical review and approval were waived for this study due to its observational and non-experimental nature, which posed no risk to the informants. In accordance with the Regulation of the Ethics Committees for Research in Human Beings of the Ministry of Public Health of Ecuador (Ministerial Agreement No. 4889, Official Registry Supplement 279, 1 July 2014), formal evaluation by an Ethics Committee is mandatory only for research involving interventions, clinical trials, or biological samples that generate foreseeable risks to health or integrity. Since this study utilized anonymous structured questionnaires without intervening in biological, psychological, or social variables, and guaranteed full confidentiality and voluntariness, it did not require formal CEISH approval. The study was conducted in strict adherence to the ethical principles of the Constitution of the Republic of Ecuador, the Organic Health Law, and the UNESCO Universal Declaration on Bioethics and Human Rights (2005).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. Participation was voluntary, and explicit informed consent was secured at the commencement of the online questionnaire. The Popular and Solidarity Economy Superintendency (PSES), in coordination with the participating cooperatives, duly informed all employees about the preservation of their personal data and the academic purpose of the survey prior to data collection.

Data Availability Statement: The data supporting the findings of this study are not publicly available due to confidentiality agreements with the Popular and Solidarity Economy Superintendency (PSES) and participating financial cooperatives, as well as ethical commitments to protect participant anonymity. However, aggregated datasets and analysis scripts may be made available from the

corresponding author upon reasonable request, subject to institutional approval and compliance with data protection regulations.

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Abbreviations

The following abbreviations are used in this manuscript:

PSES	Popular and Solidarity Economy Superintendency
CSR	Corporate Social Responsibility
SR	Social Responsibility
SCCs	Savings and Credit Cooperatives
CB-SEM	Covariance-Based Structural Equation Modeling
PMT	Protection Motivation Theory

Appendix A

Appendix A.1

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

Table A1. Variable 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 implementation of social responsibility policies, strategies, or actions.	The impact of failing to ensure trust, ethics, and transparency in governance when implementing social responsibility policies, strategies, or actions in the cooperative.	Sever01
	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

Table A1. *Cont.*

Variable	Item	Code
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.
Severety	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?

Appendix A.2

Multicollinearity among the predictor constructs (confidence, probability, severity, and concern) was assessed. The findings confirm the absence of multicollinearity problems that could compromise the stability of the structural model estimates (Table A3).

Table A3. Multicollinearity diagnostics for structural model predictors.

Variable	Tolerance	VIF	Max Correlation with Another Predictor
Trust	0.943	1.060	0.170 (with Severity)
Probability	0.939	1.065	0.159 (with Severity)
Severity	0.899	1.112	0.247 (with Worry)
Worry	0.915	1.093	0.247 (with Severity)

Note: $n = 2116$. Dependent variable: preparedness. VIF = variance inflation factor. All VIF values < 2.0 indicate no problematic multicollinearity.

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