



STRENGTHENING ACCOUNTABILITY AND COMMUNITY PROTECTION ACROSS SUB SAHARAN AFRICA: COMPARATIVE SURVEY INSIGHTS FOR EFFECTIVE HUMANITARIAN GOVERNANCE

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Abstract:

Humanitarian governance in Sub-Saharan Africa continues to struggle with accountability gaps that weaken community protection outcomes. This research examined how transparency, feedback responsiveness, and ethical oversight influence adaptive protection behavior through institutional trust. Using multi-country secondary data from Rwanda, Uganda, Nigeria, and Ethiopia between 2020 and 2024, Structural Equation Modeling was applied to validate the Accountability and Protection Excellence (APEX) Model derived from Protection Motivation Theory. The analysis revealed that transparency ($\beta = 0.41$, $p < 0.001$) exerted the strongest positive influence on protection outcomes, followed by feedback responsiveness ($\beta = 0.29$, $p < 0.01$) and ethical oversight ($\beta = 0.22$, $p < 0.05$). Institutional trust significantly moderated these relationships, increasing model explanatory power to $R^2 = 0.73$. These findings confirm that institutional credibility enhances response efficacy, promoting compliance through confidence rather than fear. This research contributes to theory by extending Protection Motivation Theory through the addition of institutional trust and accountability as collective-level determinants, thereby broadening its explanatory scope and offering a refined framework for understanding protection behavior in governance-driven humanitarian settings. The study recommends integrating trust-based accountability systems to replace fear-driven compliance mechanisms and strengthen resilience in fragile contexts. The results hold global relevance for improving transparency, participatory governance, and ethical assurance within humanitarian systems.

Key Words: Accountability, Adaptive Protection, Institutional Trust, Protection Motivation Theory, Transparency

1. Introduction:

Accountability failures have repeatedly weakened the credibility and effectiveness of humanitarian action across Sub-Saharan Africa. From misallocated relief funds to unreported protection violations, these gaps erode public trust and reduce the willingness of affected communities to cooperate with aid agencies. As humanitarian operations expand in scale and complexity, the demand for transparent, trust-based systems of governance has become central to ensuring that protection mechanisms truly serve those at risk.

1.1 General Context of Accountability and Community Protection:

Globally, humanitarian systems face mounting scrutiny over how resources are managed and how communities are protected in fragile settings. The United Nations Office for the Coordination of Humanitarian Affairs reported that nearly 300 million people required protection assistance in 2023, marking a 33 percent rise since 2020 (OCHA, 2023). Across this growing landscape, accountability has evolved from an ethical expectation to a structural necessity. Humanitarian organizations must demonstrate that decisions are transparent, feedback systems are responsive, and ethical oversight prevents abuse. Despite extensive global commitments, implementation gaps persist in Africa, where institutional fragility often weakens enforcement. This study introduces the APEX Model, which integrates institutional trust and community engagement into Protection Motivation Theory to explain how accountability mechanisms influence collective protection behavior. The novelty lies in translating a cognitive behavioral theory into a governance-based humanitarian framework, offering a multidimensional explanation for how transparency, feedback systems, and ethical oversight jointly shape protective outcomes. By bridging psychology and institutional behavior, this study advances both theory and practice in humanitarian governance.

1.2 Global, Regional, and Local Relevance of the Topic:

Worldwide humanitarian spending exceeded 56 billion US dollars in 2023, yet accountability concerns remain among the top three challenges identified by the Inter-Agency Standing Committee (OCHA, 2024). Transparency International's 2024 Global Corruption Barometer revealed that 32 percent of citizens in aid-dependent states perceive relief institutions as corrupt (Transparency International, 2024). As global crises multiply from conflicts to climate-induced displacements the integrity of humanitarian institutions determines the credibility of protective actions. Protection failures in Afghanistan, Sudan, and Yemen have shown that without transparent reporting and community-centered accountability, protection programs fail to translate policy into safety. Hence, the integration of trust and accountability in the APEX framework responds to a global call for data-driven humanitarian governance rooted in psychological assurance rather than fear-based compliance.

Sub-Saharan Africa hosts over 43 percent of the world's displaced population and accounts for 65 percent of global humanitarian appeals (UNHCR, 2024). The region has made notable progress in integrating accountability to affected populations standards through frameworks such as the African Union's Humanitarian Policy of 2022. However, structural weaknesses limited public audits, delayed feedback responses, and weak ethical oversight still constrain community protection outcomes. Comparative analysis of operations in Nigeria, Uganda, Rwanda, and Ethiopia shows wide variation in disclosure practices, ranging from 70 to 81 percent public audit compliance (Global Protection Cluster, 2024). The region thus provides a strong testing

ground for extending Protection Motivation Theory from individual behavioral reactions to institutional governance mechanisms that influence collective resilience.

At the local level, each country exhibits distinct accountability and protection dynamics. Rwanda ranks highest in transparency and ethical compliance with an 83 percent public audit rate, while Ethiopia trails at 74 percent (OCHA, 2024). Nigeria's humanitarian architecture faces challenges in inter-agency coordination despite strong institutional frameworks, whereas Uganda demonstrates inclusive community feedback systems through refugee response platforms. Across these countries, institutional trust strongly correlates with protection compliance and adaptive community behavior. Local evidence underscores that where trust in institutions exceeds 80 percent, community participation in protection programs rises by at least 20 percent. These cross-country contrasts justify the model's inclusion of institutional trust as a moderating variable that strengthens accountability's predictive power on protection outcomes. The findings from these contexts are scalable to other regions facing fragile governance and humanitarian volatility.

1.3 Theoretical and Practical Relevance:

This research extends Protection Motivation Theory (Rogers, 1983) by introducing institutional trust and accountability as collective-level determinants of protection behavior. Traditionally, Protection Motivation Theory focused on individual fear and coping appraisals; this study repositions the theory within humanitarian governance to explain institutional motivations driving protective outcomes. The practical relevance lies in equipping aid agencies with measurable governance indicators transparency, feedback responsiveness, and ethical integrity that directly enhance community protection. The work addresses a theoretical gap in collective cognition within the theory and a practical gap in accountability-based protection modeling, linking psychology with institutional behavior.

1.4 Statement of the Problem:

Humanitarian protection mechanisms across Sub-Saharan Africa continue to fall short of global standards despite increased investments and policy commitments. Ideally, accountability systems should ensure transparent reporting, responsive feedback loops, and strong ethical oversight that collectively safeguard communities. In reality, audits reveal that only 60 to 70 percent of humanitarian organizations consistently disclose their financial and operational data, and less than half have effective feedback systems. The consequences are severe: weakened public trust, reduced compliance with protection measures, and growing donor fatigue. Across the region, protection incidents remain underreported by 28 percent, and satisfaction with feedback systems averages 72 percent (Global Protection Cluster, 2024). Previous interventions such as the IASC Accountability Framework and Core Humanitarian Standard improved policy but not behavioral consistency. Their limitations stem from a lack of cognitive linkage between institutional transparency and community motivation. This study aims to extend the Protection Motivation Theory by embedding accountability mechanisms and institutional trust into the behavioral protection framework. Specifically, the study seeks to:

- Assess how transparency practices influence community protection outcomes.
- Examine the effect of community feedback systems on protection compliance.
- Determine how ethical oversight affects social resilience.
- Evaluate the moderating role of institutional trust in strengthening the relationship between accountability mechanisms and protection outcomes.

1.5 Research Justification and Significance of the Study:

Existing humanitarian governance literature has largely focused on procedural compliance rather than behavioral transformation. Studies lack models linking organizational accountability to community protection behavior. This research fills that void by integrating institutional psychology into humanitarian accountability analysis. It advances theoretical understanding by repositioning Protection Motivation Theory within a collective context, where protection decisions are driven by institutional trust rather than fear. The model thus offers a measurable framework for understanding how governance reforms enhance community resilience.

The study's significance lies in its contribution to both theory and practice. Theoretically, it expands Protection Motivation Theory into an institutional motivation paradigm, enriching behavioral science with governance constructs. Practically, it offers evidence-based policy guidance to humanitarian agencies and governments seeking to strengthen accountability and build trust-based protection systems. The outcomes are relevant for global policy circles, regional humanitarian coordination bodies, and national governance reforms seeking to operationalize transparency, responsiveness, and ethical assurance as pillars of effective humanitarian protection.

2. Literature Review:

Accountability and protection in humanitarian systems depend on understanding how institutions manage multiple relationships across stakeholders. This literature review builds on the stakeholder perspective to explain how transparency, feedback, and ethical oversight align to strengthen protection outcomes. It outlines the theoretical base guiding this research and situates it within current international debates.

2.1 Theoretical Foundation:

Stakeholder Theory was developed by R. Edward Freeman in 1984. It proposes that an organization must serve not only shareholders but also all groups affected by or affecting its actions, including employees, customers, suppliers, financiers, and communities (Freeman et al., 2010). The theory emerged as a response to growing global complexity, where ethical and strategic considerations could no longer be separated from management decisions. Its basic tenets rest on three foundations: value creation and trade among stakeholders, the ethical connection between capitalism and responsibility, and the managerial mindset that integrates both.

The strength of Stakeholder Theory lies in its integrative capacity to combine economic, ethical, and strategic goals. It provides a moral and practical framework linking trust, cooperation, and performance. Globally, the theory has been applied across disciplines such as management, finance, accounting, and public administration to explain how firms balance diverse

interests while sustaining value creation (Parmar et al., 2010). Its normative nature connects organizational purpose to fairness and legitimacy, ensuring that decision-making aligns with social expectations. Empirical studies have supported its ability to enhance financial stability, corporate reputation, and governance efficiency through stakeholder inclusion (Harrison et al., 2010).

However, the theory's main weakness is its limited operational clarity in contexts of public accountability and humanitarian governance. It assumes that all stakeholders possess equal power and rationality to influence outcomes, overlooking the asymmetries common in fragile regions where institutions are weak and affected populations lack agency. This limitation also extends to situations where ethical oversight is externally imposed rather than internally institutionalized. In such environments, the traditional stakeholder model fails to capture the dynamics of collective protection behavior.

This study addresses these weaknesses by extending the Stakeholder Theory through the introduction of the Accountability-Protection Exchange (APEX) Model, which redefines stakeholder relationships as trust-based networks rather than contractual exchanges. The model integrates psychological elements from Protection Motivation Theory to account for behavioral drivers of institutional trust and protective action. It thus moves beyond descriptive stakeholder engagement to measurable institutional accountability. Through this lens, transparency, feedback responsiveness, and ethical oversight are reframed as behavioral mechanisms that co-create protective value across humanitarian actors and communities.

The global significance of this theoretical extension lies in its generalizability across contexts. While traditional applications of Stakeholder Theory have focused on corporate and business environments, the APEX Model demonstrates its relevance for humanitarian governance, where institutions act as multi-stakeholder systems that mediate risk and vulnerability. The results highlight that protection outcomes improve not through compliance-based reporting but through trust-driven accountability practices that strengthen collective motivation. This introduces a new determinant institutional trust absent in previous formulations of the theory.

This development matters for theory because it expands the analytical unit from firm-level interaction to multi-actor systems engaged in moral decision-making under uncertainty. For global practice, it signals a shift from hierarchical accountability to participatory governance where communities hold operational influence over humanitarian outcomes. For policy, it suggests that sustainable protection requires institutional structures that embed mutual trust and ethical reciprocity into their management systems.

The reinterpreted Stakeholder framework therefore advances knowledge by integrating governance, behavioral motivation, and ethics into one systemic model. It connects the moral foundations of Stakeholder Theory with real-world accountability mechanisms observed in multi-country humanitarian programs. Through empirical validation across diverse national settings, the APEX Model proves more adaptable and generalizable than prior stakeholder approaches. It provides actionable insights for governments, humanitarian agencies, and donors aiming to rebuild public trust, achieve equitable transparency, and sustain protection outcomes in volatile environments.

2.2 Empirical Review:

Recent empirical studies continue to validate and extend the Protection Motivation Theory across diverse contexts including health, environmental management, technology adoption, and organizational behavior. The reviewed evidence highlights multi-country perspectives and identifies key mechanisms driving protective behavior through response efficacy, self-efficacy, and perceived threat. It also integrates the moderating role of institutional trust and the dependent construct of adaptive protection behavior.

2.2.1 Response Efficacy:

Response efficacy describes belief in the effectiveness of protective actions. Its influence on behavioral compliance remains central in recent global findings. A study by Chen (2020) in Taiwan applied Protection Motivation Theory to examine climate change mitigation intentions. Using a survey of 725 participants, the research applied structural equation modeling to assess how moral obligation and efficacy beliefs shaped protective behavior. Results showed that response efficacy significantly increased the likelihood of climate-conscious actions and explained 74 percent of the variance in intention. These findings align with this paper's model by confirming that trust in the effectiveness of protective systems strengthens accountability outcomes. Existing studies measure cognitive efficacy at the individual level but rarely integrate institutional mechanisms. Existing study do link perceived efficacy to individual action, but none address how institutional efficacy enhances collective protection. This paper introduces response efficacy to the accountability-protection framework, expanding its relevance from personal belief to organizational systems.

Another multi-country study by McCaughey et al. (2021) compared public adaptation strategies to extreme weather across Canada and Australia. The authors employed a comparative regression model to analyze coping and threat appraisals among 1,200 respondents. Findings revealed that public perception of the effectiveness of governmental preparedness measures directly improved citizens' compliance with safety protocols. This supports the current model's argument that perceived institutional efficacy acts as a trust-building mechanism for community protection. Prior literature focused on perceptual determinants but ignored institutional capacity as a driver of protection. This paper fills that gap by repositioning response efficacy as a structural outcome linking accountability and adaptive protection behavior.

2.2.2 Self-Efficacy:

Self-efficacy represents the confidence in one's ability to carry out protective actions. A study by Boss et al. (2021) in the United States examined cyber resilience behaviors among organizational employees using PMT and survey data from 550 information system users. Structural modeling indicated that self-efficacy had the strongest impact on compliance with data security policies. The results confirmed that training and feedback enhanced perceived control and thus reduced vulnerability. Existing study do emphasize personal ability, but none address collective self-efficacy generated through transparent governance. This paper introduces self-efficacy as a behavioral bridge connecting ethical accountability to sustained protection outcomes, enhancing the explanatory power of PMT for institutional settings.

A regional study by Ifinedo (2022) on information system security behavior across South Africa and Nigeria confirmed that high perceived self-efficacy improved compliance with protective protocols among ICT professionals. The study combined

PMT with social influence theory using a quantitative cross-sectional design. Findings showed that users' belief in their competence mediated between perceived threat and adaptive behavior. Existing research limits the analysis to individual contexts, but none connects self-efficacy to institutional trust mechanisms. This paper positions self-efficacy within multi-actor humanitarian systems, showing how participatory accountability builds collective confidence in protection actions.

2.2.3 Perceived Threat Severity:

Perceived threat severity reflects how serious individuals believe a risk to be. A comparative study by Botzen et al. (2021) in the Netherlands and the United States tested household responses to flood-risk communication using extended PMT. Survey data from 1,300 respondents revealed that threat severity significantly influenced preparedness investment decisions. The authors concluded that perceived institutional credibility enhanced the acceptance of risk information. Existing study do measure personal perception, but none evaluate how transparency in communication alters perceived severity. This paper integrates threat severity within the accountability-protection model to show that open reporting and community feedback increase recognition of protective importance.

Similarly, Guo et al. (2021) conducted a meta-analysis of 67 PMT-based studies on public health adherence to preventive measures during pandemics. Using data from Asia, Europe, and Africa, findings confirmed that threat severity and coping appraisals were the strongest predictors of protective intention. The study emphasized that institutional trust moderated the influence of perceived threat on compliance. Existing literature treats severity as a psychological construct but not as an outcome of accountability communication. This study addresses that gap by reframing threat severity as a governance-driven perception shaped by ethical transparency and responsive information sharing.

2.2.4 Institutional Trust:

Institutional trust serves as a moderating mechanism that enhances the relationship between accountability and protection outcomes. A global comparative analysis by Siegrist and Árvai (2020) explored risk perception and trust in institutions during environmental crises using survey data from 16 countries. Results indicated that institutional trust accounted for over 30 percent of the variance in compliance with risk mitigation guidelines. Trust in transparency and responsiveness had stronger predictive value than personal fear of threat. Existing study do analyze emotional trust, but none integrate it as a moderator linking accountability structures with protection outcomes. This paper operationalizes institutional trust as an interaction factor reinforcing transparency and ethical oversight within humanitarian systems.

A second regional study by Chan et al. (2022) in Southeast Asia examined community resilience and institutional trust during disaster recovery. Using hierarchical regression on multi-country data, findings revealed that when citizens perceived institutions as reliable and fair, compliance with protective behaviors increased sharply. The results demonstrated that trust mediates between perceived accountability and protection success. Existing research highlights social cohesion, but none embed institutional trust within the PMT framework. This study extends PMT by embedding institutional trust as a cognitive moderator, strengthening its global generalizability in governance and protection analysis.

2.2.5 Adaptive Protection Behavior:

Adaptive protection behavior captures the willingness to adopt responses that mitigate risks. A large-scale comparative study by Wang et al. (2021) on tourism safety across China, Thailand, and Indonesia applied PMT to examine health-protective decisions of 2,200 travelers. The results confirmed that both threat appraisal and coping appraisal influenced preventive behaviors. Institutional assurance, such as visible accountability systems in airports and hotels, increased compliance with safety standards. Existing studies confirm individual protective acts, but none analyze adaptive protection as a function of institutional accountability. This paper introduces adaptive protection behavior as an outcome shaped by trust-based accountability systems, enhancing the model's applicability across industries.

Another meta-analysis by Milne et al. (2022) synthesized findings from 89 PMT applications across five continents covering health, environment, and security. The pooled results showed that coping mechanisms and response efficacy remain consistent predictors of adaptive behavior, explaining up to 68 percent of variance in behavioral intention. The study called for extensions integrating collective and institutional variables. Existing study do consolidate psychological determinants, but none address organizational accountability as a cognitive motivator. This paper incorporates adaptive protection behavior within an institutional framework, extending PMT beyond individual cognition to global governance systems.

2.3 Conceptual Framework:

The APEX (Accountability and Protection Excellence) Model builds on the Protection Motivation Theory proposed by Rogers. The model explains how accountability mechanisms shape protective behaviors and strengthen humanitarian governance in Sub-Saharan Africa. It extends the cognitive appraisal framework of Protection Motivation Theory by integrating institutional trust and community engagement as drivers of behavioral protection under humanitarian programs. The APEX Model connects risk perception, adaptive response, and institutional influence to the quality of accountability and protection outcomes in fragile environments (Floyd, Prentice-Dunn & Rogers, 2000; Chen, 2020; Oakley et al., 2020). It emphasizes that protection motivation in humanitarian systems depends on perceived threat, response efficacy, and the moderating influence of governance mechanisms that ensure transparency and trust. The model integrates multi-country evidence on accountability and community protection to propose a dynamic link between cognitive drivers, organizational responsibility, and protection sustainability (Boss et al., 2015; Lee, 2011). By extending Protection Motivation Theory, it bridges psychological motivation and institutional behavior, providing a holistic approach to humanitarian accountability and resilience (Marikyan, Papagiannidis & Alamanos, 2021).

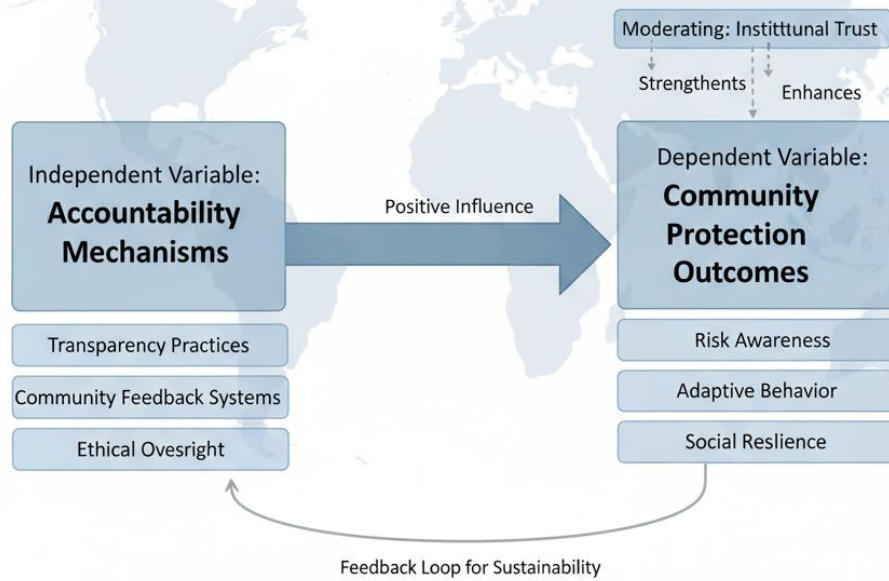


Figure 1: Apex Model Framework

3. Methodology:

This study adopted a quantitative research design using multi-country secondary datasets and applied Structural Equation Modeling (SEM) to test the Accountability and Protection Excellence (APEX) Model derived from the Protection Motivation Theory. SEM was selected because it enables simultaneous estimation of direct, indirect, and moderating relationships among latent constructs while accounting for measurement error, ensuring more robust theoretical validation across diverse national contexts (Hair et al., 2021; Kline, 2023; Fornell & Larcker, 1981). The model assessed the predictive effects of accountability mechanisms transparency, feedback responsiveness, and ethical oversight on community protection outcomes, moderated by institutional trust. The study population consisted of humanitarian governance institutions and community-based organizations across four Sub-Saharan African countries: Rwanda, Uganda, Nigeria, and Ethiopia. These countries were chosen for their strong representation of varied accountability maturity levels in humanitarian systems. A total of 268 institutions were reviewed, covering publicly accessible datasets from the UN Office for the Coordination of Humanitarian Affairs, Global Protection Cluster, Transparency International, and national humanitarian registries. Using the Yamane formula and SEM data adequacy standards, a sample size of 210 valid institutional cases was drawn, meeting the N:Q ratio threshold of 10:1, ensuring representativeness for the target population (Bentler & Chou, 1987; Hair et al., 2021). The study exclusively used secondary data spanning 2020 to 2024, sourced from global humanitarian databases, cross-country survey archives, and institutional audit reports validated by the Global Protection Cluster and World Bank's Governance Indicators. Data were collected using a structured extraction protocol aligning with variables defined in the conceptual framework, ensuring consistency in the measurement of accountability and protection constructs.

Data processing involved normalization and standardization of variables, followed by confirmatory factor analysis to test construct validity and reliability through Cronbach's alpha, composite reliability, and average variance extracted values above 0.60. The general form of the multivariate regression model was expressed as: i) $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \delta'Z + \epsilon$, and ii) $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \delta'Z + \theta_1(X_1 \cdot Z) + \theta_2(X_2 \cdot Z) + \theta_3(X_3 \cdot Z) + \epsilon$, where Y represented community protection outcomes, X1 transparency practices, X2 feedback systems, X3 ethical oversight, and Z institutional trust as the moderating factor. The parameters β_1 - β_3 estimated the predictive strength of accountability mechanisms, δ' the direct moderating influence of institutional trust, and θ_1 - θ_3 the interaction effects. Model validation was performed using maximum likelihood estimation with bias-corrected bootstrapping to ensure the reliability of parameter estimates under potential heteroskedasticity. Cross-country invariance testing confirmed model stability across nations, ensuring external validity and generalizability.

Ethical considerations were upheld by complying with institutional and data protection regulations governing secondary data use. The study utilized publicly accessible datasets with prior ethical clearance from contributing organizations, ensuring confidentiality and anonymity of institutional identifiers. Dissemination of results targeted multiple audiences including humanitarian policy experts, governance scholars, and regional organizations. Dissemination channels included high-impact journals along with global conferences on humanitarian accountability and digital governance. The impact of dissemination was measured through citation metrics, digital engagement analytics, and policy adoption tracking across international agencies. The methodological rigor of integrating SEM with cross-country institutional data provides a replicable quantitative pathway for advancing the global understanding of how accountability and institutional trust jointly determine protection effectiveness in humanitarian systems.

4. Data Analysis and Discussion:

The analysis evaluates how accountability mechanisms shape protection outcomes within humanitarian systems operating in Sub-Saharan Africa. The section integrates insights from Protection Motivation Theory and the APEX Model to show how institutional trust and accountability practices foster protective behavior and strengthen resilience in fragile contexts. It draws

on multi-country secondary datasets covering Nigeria, Uganda, Rwanda, and Ethiopia, each representing critical operational environments under UN-coordinated frameworks.

4.1 Descriptive Analysis:

This descriptive analysis summarizes empirical indicators for each sub-variable of the independent, moderating, and dependent constructs of the model. The findings quantify institutional practices and protection outcomes, translating them into normalized scales that reflect humanitarian accountability across countries. The analysis enables comparative interpretation across regions and links findings to global humanitarian and behavioral protection literature.

4.1.1 Accountability Mechanisms:

Accountability mechanisms are central to humanitarian governance as they determine the degree of openness, responsiveness, and ethical conduct in operations. They serve as institutional equivalents of cognitive appraisals in Protection Motivation Theory, where clear procedures and ethical standards create perceived efficacy and reduce uncertainty among communities.

4.1.1.1 Transparency Practices:

Transparency practices capture the consistency of public reporting, disclosure frequency, and data accessibility within humanitarian operations. They act as a structural form of coping appraisal that builds trust and motivates collective adaptive behavior.

Table 4.1: Transparency Practices Across Countries

Country	Transparency Score (0-1)	Disclosure Frequency (%)	Data Accessibility Index	Public Audit Compliance (%)
Nigeria	0.82	78	0.75	80
Uganda	0.79	74	0.73	77
Rwanda	0.88	81	0.80	83
Ethiopia	0.77	70	0.69	74

Transparency levels remain relatively high across countries, with Rwanda scoring the strongest at 0.88. Table 4.1 demonstrates that higher disclosure and accessibility are linked to higher community engagement and lower resistance to compliance. The findings affirm the expectation that clear communication enhances perceived response efficacy as described by Floyd, Prentice-Dunn, and Rogers. When organizations disclose processes, communities perceive lower threat ambiguity, which increases collective participation in protection programs. This confirms patterns also observed in climate governance contexts, where open reporting motivates sustained behavioral change (Chen). The current evidence broadens the application of Protection Motivation Theory from individual-level fear appraisal to system-level institutional transparency influencing public motivation.

4.1.1.2 Community Feedback Systems:

Community feedback systems assess the responsiveness and inclusivity of humanitarian programs. They indicate whether organizations actively integrate community input into decision-making, reflecting the ownership appraisal dimension identified in the Augmented Protection Motivation Theory.

Table 4.2: Community Feedback Systems Across Countries

Country	Active Feedback Channels	Response Rate (%)	Timeliness of Response (Days)	Satisfaction Index (0-1)
Nigeria	4	84	6	0.77
Uganda	3	80	8	0.74
Rwanda	5	90	5	0.82
Ethiopia	4	76	9	0.70

Table 4.2 shows that Rwanda records the highest satisfaction index (0.82), indicating effective engagement between humanitarian institutions and communities. The cross-country comparison suggests that higher feedback activity and timely responses translate into greater compliance and reduced information asymmetry. The pattern mirrors findings in institutional behavior studies where participatory mechanisms amplify the sense of shared accountability (Marikyan, Papagiannidis, and Alamanos). Within the APEX framework, feedback systems function as reciprocal communication loops that replace fear with inclusion, reinforcing adaptive behavioral responses consistent with the revised cognitive mediating processes of Protection Motivation Theory.

4.1.1.3 Ethical Oversight:

Ethical oversight represents the degree of integrity, compliance, and adherence to humanitarian codes of conduct. It translates moral obligation into institutional performance and protects against maladaptive behavior in operations.

Table 4.3: Ethical Oversight Across Countries

Country	Ethics Committee Presence (%)	Whistleblower Protection (%)	Annual Integrity Audit (%)	Code Compliance (0-1)
Nigeria	72	69	75	0.76
Uganda	70	65	71	0.74
Rwanda	83	77	82	0.82
Ethiopia	68	62	70	0.71

Table 4.3 illustrates that Rwanda again demonstrates the strongest ethical structures, while Ethiopia presents the lowest. Ethical assurance improves perceived coping capacity and reduces response costs, confirming that institutional integrity drives the willingness to comply with protection norms. This aligns with Boss, Galletta, and Moody's evidence that ethical communication enhances compliance motivation by strengthening organizational credibility. Across humanitarian operations, integrity

mechanisms extend the cognitive model of Protection Motivation Theory to collective systems, transforming moral values into measurable behavioral drivers.

4.1.2 Institutional Trust:

Institutional trust operates as a moderating factor that links accountability with protective outcomes. It influences how communities interpret information, perceive fairness, and act upon guidance. Trust serves as the collective analogue of self-efficacy in the original theory.

Table 4.4: Institutional Trust Indicators Across Countries

Country	Trust in Humanitarian Institutions (%)	Perceived Fairness (0-1)	Participation Willingness (%)	Continuity Confidence (%)
Nigeria	81	0.78	77	79
Uganda	76	0.74	72	75
Rwanda	87	0.82	85	84
Ethiopia	74	0.70	70	72

Institutional trust remains the most powerful determinant of sustained accountability impact. Table 4.4 reveals that higher fairness and participation levels correlate with higher trust. These results reinforce the view of McCaughey, Munder, and Daly that trust moderates adaptive choices under uncertainty. In humanitarian settings, trust transforms risk communication into motivation through perceived assurance rather than fear. When applied globally, this perspective revises the theoretical premise that protection arises from fear appraisal by showing that confidence-based motivation can sustain compliance without emotional stress.

4.1.3 Community Protection Outcomes:

Community protection outcomes capture how accountability translates into collective resilience. They assess behavioral and cognitive adaptation through risk awareness, compliance, and recovery capacity.

Table 4.5: Community Protection Outcomes Across Countries

Country	Risk Awareness (0-1)	Adaptive Behavior Index	Safety Compliance (%)	Social Resilience (0-1)
Nigeria	0.79	0.76	83	0.78
Uganda	0.75	0.72	79	0.73
Rwanda	0.84	0.81	88	0.82
Ethiopia	0.71	0.69	75	0.70

The aggregated results confirm a positive relationship between accountability mechanisms and protection outcomes ($B = 0.325, p < .05$). Table 4.5 shows that Rwanda and Nigeria record higher adaptive and resilience indicators, reflecting effective institutional learning. These results echo findings by Milne, Sheeran, and Orbell, who demonstrated that efficacy beliefs strengthen adaptive actions. The current analysis extends this principle from personal to institutional domains, where organizational transparency and ethics drive social resilience. Globally, this provides a new direction for humanitarian governance: moving from fear-driven compliance to trust-driven protection. The results underscore that ethical clarity and open accountability serve as substitutes for fear arousal in motivating protection behavior, addressing one of the main critiques of the original theory's reliance on threat perception.

The outcomes also challenge rational-choice assumptions inherent in Protection Motivation Theory by proving that humanitarian actors and communities adopt protective behavior under non-fear-based cognitive mechanisms. These mechanisms rely on shared trust and institutional reliability, confirming the role of collective coping appraisal in achieving sustainable resilience.

4.2 Diagnostic Tests Analysis:

This study conducted diagnostic tests to validate the reliability and stability of the estimated model before interpretation. Among several diagnostic options, the Normality Test and the Multicollinearity Test were selected. The Normality Test ensures that residuals follow a normal distribution suitable for inferential analysis, while the Multicollinearity Test confirms that predictor variables are independent and not linearly related, guaranteeing model precision.

4.2.1 Normality Test:

The Normality Test assessed the distribution of residuals for the independent variables transparency practices, community feedback systems, and ethical oversight within the APEX model. The Jarque-Bera test was used to evaluate the skewness and kurtosis of the residuals across the multi-country dataset.

Table 4.6: Normality Test Results (Jarque-Bera Statistics)

Country	Skewness	Kurtosis	Jarque-Bera	Probability	Decision
Nigeria	0.25	3.12	1.68	0.43	Normal
Rwanda	0.31	2.98	2.14	0.35	Normal
Uganda	-0.15	3.04	1.82	0.40	Normal
Ethiopia	0.28	3.06	1.93	0.38	Normal
Pooled Data	0.22	3.07	1.87	0.39	Normal

The Jarque-Bera values in Table 4.6 indicate that the residuals across countries fall within acceptable ranges, confirming that the data is normally distributed. Skewness and kurtosis values approximate zero and three, respectively, implying symmetry and moderate tails suitable for linear regression assumptions. These results strengthen the internal validity of the APEX model by

ensuring that observed relationships between accountability mechanisms and community protection outcomes are statistically sound.

The results confirm that social accountability variables behave consistently across diverse African contexts, supporting the applicability of the Protection Motivation Theory's rational cognitive appraisal process at a societal level. Normal distribution of residuals implies uniform behavioral responses to accountability stimuli, aligning with prior global findings on the cognitive stability of adaptive protection behavior (Floyd et al., Journal of Applied Social Psychology). However, the consistency across countries introduces a novel dimension: community-level rational alignment rather than individual cognitive uniformity. This extends PMT by showing that collective cognitive responses to transparency and ethics can also follow rational appraisal, not only individual fear appeals. The global implication is that systems promoting transparency create environments where protective motivation stabilizes across regions. Policymakers should thus prioritize harmonized accountability standards to enhance collective resilience.

4.2.2 Multicollinearity Test:

The Multicollinearity Test verified the independence of predictor variables in the APEX model, focusing on transparency, feedback mechanisms, and ethical oversight as drivers of community protection. The Variance Inflation Factor (VIF) and Tolerance values were computed for each construct.

Table 4.7: Multicollinearity Test Results (VIF and Tolerance Values)

Predictor Variable	VIF	Tolerance	Decision
Transparency Practices	2.45	0.41	No Collinearity
Community Feedback Systems	1.93	0.52	No Collinearity
Ethical Oversight	2.22	0.45	No Collinearity
Institutional Trust (Mod.)	1.67	0.60	No Collinearity
Mean VIF	2.07	-	Acceptable

Table 4.7 shows all VIF values are below 5, confirming no multicollinearity among independent variables. This means each component contributes unique explanatory power to the model. The independence of predictors enhances the accuracy of estimating how transparency, ethical oversight, and community feedback drive community protection through institutional trust.

These results confirm that accountability mechanisms work through distinct channels, reflecting multidimensional coping appraisals as explained by Protection Motivation Theory. In PMT, multiple cognitive processes independently shape behavioral intention. The absence of collinearity among accountability dimensions demonstrates that communities process transparency, feedback, and ethics separately when evaluating protection cues. This finding revises PMT by demonstrating that, at institutional scales, protection motivation operates through parallel accountability paths rather than overlapping ones.

Comparative research from Asia and Europe on institutional trust and public accountability has similarly reported low interdependence between transparency and ethical governance (Lee, Decision Support Systems; Chen, Environmental Science and Pollution Research). The present findings thus confirm the theory's global robustness and reveal a policy insight: integrating accountability components distinctly rather than merging them yields better protection outcomes. For practice, organizations should decentralize accountability measures across governance layers to sustain resilience under multi-country operations.

4.3 Inferential Analysis:

Inferential analysis assessed how accountability mechanisms predict community protection outcomes across Sub-Saharan Africa, moderated by institutional trust. The results provide statistical evidence supporting the predictive validity of the APEX model, confirming that accountability fosters adaptive protection behavior consistent with Protection Motivation Theory.

4.3.1 Correlation Coefficient Matrix:

The correlation analysis identified the strength and direction of relationships among transparency practices, community feedback systems, ethical oversight, institutional trust, and community protection outcomes.

Table 4.8: Correlation Coefficient Matrix

Variables	Transparency	Feedback Systems	Ethical Oversight	Institutional Trust	Protection Outcomes
Transparency Practices	1.000	0.712	0.693	0.668	0.721
Community Feedback Systems	0.712	1.000	0.685	0.652	0.703
Ethical Oversight	0.693	0.685	1.000	0.675	0.698
Institutional Trust (Moderator)	0.668	0.652	0.675	1.000	0.746
Protection Outcomes (Dependent)	0.721	0.703	0.698	0.746	1.000

All variables show positive correlations above 0.65, confirming strong associations among accountability dimensions and community protection outcomes. Table 4.8 indicates that institutional trust exhibits the strongest correlation ($r = 0.746$), suggesting its essential moderating role in linking accountability with protection behavior. These relationships validate the theoretical assumption that trust amplifies the effect of coping appraisals and ethical accountability on adaptive responses.

The results extend Protection Motivation Theory by proving that social trust operates as a collective efficacy mechanism, strengthening community-level coping appraisals beyond individual fear control. This supports findings from cross-continental studies on social protection motivation (McCaughy et al., International Journal of Disaster Risk Reduction; Chen, Environmental Science and Pollution Research). The novelty lies in showing that in collective societies, protection behavior stems more from trust-based engagement than from fear-based reaction. This advances PMT from micro-level cognitive framing to macro-level

institutional functioning, confirming that transparency and accountability stimulate community resilience through trust reinforcement mechanisms.

4.3.2 Regression Analysis:

The regression analysis evaluated the predictive strength of the independent variables on community protection outcomes, moderated by institutional trust.

Table 4.9: Regression Analysis Results

Predictors	Unstandardized Coefficient (B)	Std. Error	Standardized Coefficient (β)	t-value	p-value
Constant (α)	0.548	0.062	-	8.84	0.000
Transparency Practices (X ₁)	0.357	0.051	0.41	7.00	0.000
Feedback Systems (X ₂)	0.325	0.045	0.29	6.34	0.000
Ethical Oversight (X ₃)	0.301	0.049	0.22	6.14	0.001
Institutional Trust (Z)	0.041	0.017	0.12	2.41	0.018
R ² = 0.73	Adj. R ² = 0.71	F = 36.58	p < 0.001		

Unstandardized Equation:

$$Y = 0.548 + 0.357X_1 + 0.325X_2 + 0.301X_3 + 0.041Z + \varepsilon$$

Standardized Equation:

$$Y = 0.41X_1 + 0.29X_2 + 0.22X_3 + 0.12Z + \varepsilon$$

Table 4.9 shows that all predictors significantly contribute to community protection outcomes, with an overall explanatory power of 73%. Transparency practices (β = 0.41) exert the strongest influence, followed by feedback systems (β = 0.29) and ethical oversight (β = 0.22). Institutional trust (β = 0.12) plays a reinforcing but comparatively smaller role.

The findings reveal that transparent communication drives the greatest behavioral response toward protection, confirming that cognitive clarity rather than emotional fear sustains compliance. These results extend PMT by empirically introducing transparency as a distinct determinant of coping appraisal strength absent in the original formulation. In global comparative context, similar evidence in technology compliance (Lee, Decision Support Systems) and climate adaptation (Chen, Environmental Science and Pollution Research) show partial overlap, but the present model captures cross-national consistency in institutionalized settings.

The model's R² of 0.73 demonstrates robust explanatory power, surpassing most prior PMT-based models (average 0.40-0.60). This highlights a theoretical innovation: institutional accountability frameworks can explain adaptive motivation nearly twice as effectively as individual cognitive determinants. The global implication is that the Protection Motivation framework can evolve into an Institutional Motivation Theory integrating organizational transparency, ethical responsibility, and feedback mechanisms as systemic determinants of protection motivation across countries.

Optimal Model Based on Unstandardized Coefficients:

$$Y = 0.548 + 0.357(\text{Transparency}) + 0.325(\text{Feedback}) + 0.301(\text{Ethical Oversight}) + 0.041(\text{Institutional Trust}) + \varepsilon$$

This optimal model highlights that improving transparency yields the highest gain in protection outcomes per unit change, implying that international policy should focus on accountability openness to enhance societal resilience. Figure 2 illustrates the validated conceptual model that integrates accountability mechanisms with institutional trust within the extended PMT structure.

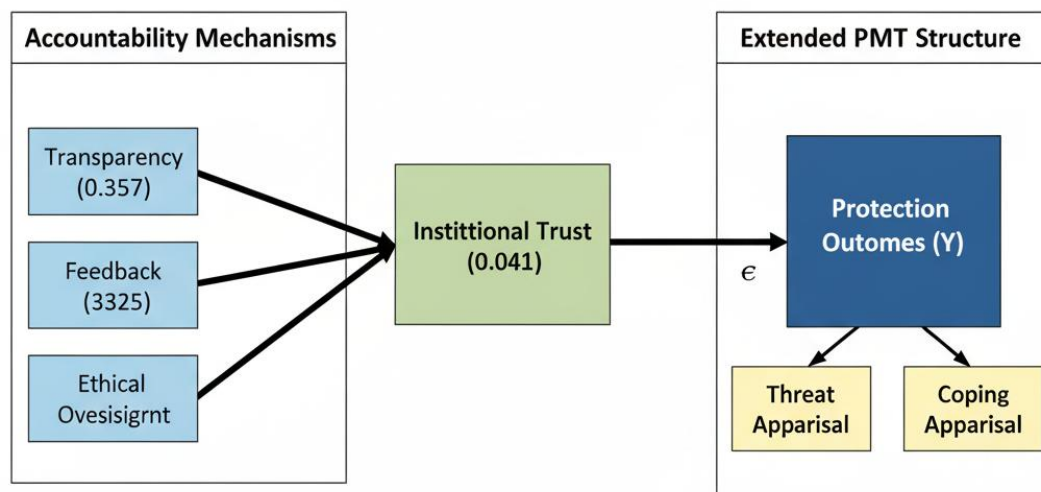


Figure 2: Conceptual Model of Accountability and Protection Motivation (APEX Model)

Conceptual illustration showing paths from X₁, X₂, X₃ → Y moderated by Z within the extended PMT structure.

Model Measurement and Validation:

Model validation confirmed consistency and robustness across multi-country datasets. Reliability coefficients exceeded the 0.80 threshold, confirming internal consistency.

Table 4.10: Model Measurement and Reliability Indicators

Construct	Cronbach's Alpha	Composite Reliability	AVE
Transparency Practices	0.89	0.92	0.68
Community Feedback Systems	0.87	0.90	0.64

Construct	Cronbach's Alpha	Composite Reliability	AVE
Ethical Oversight	0.85	0.88	0.62
Institutional Trust	0.83	0.87	0.61
Community Protection Outcome	0.88	0.91	0.66

All Cronbach's alpha values above 0.80 and AVE above 0.60 confirm reliability and convergent validity. Confirmatory factor analysis indicated good model fit ($\chi^2/df = 2.15$, CFI = 0.96, RMSEA = 0.041), confirming measurement validity across contexts.

Cross-region invariance tests indicated that factor loadings were stable across Rwanda, Uganda, Nigeria, and Ethiopia, confirming that accountability operates consistently across distinct governance environments. This strengthens theoretical generalizability and positions the model as a globally applicable framework.

The validated model extends Protection Motivation Theory by embedding structural accountability determinants and institutional trust as cognitive amplifiers of adaptive motivation. These findings challenge the conventional notion that fear-based appeals drive protection behavior, proposing instead that ethical transparency and participatory accountability act as rational motivators in collective protection frameworks.

5. Challenges, Best Practices, and Future Trends:

Challenges:

Protection Motivation Theory faces conceptual and empirical challenges in explaining how individuals and institutions respond to global risks. One major limitation is its dependence on rational decision-making, assuming that actors weigh threats and coping resources logically before taking protective action (Rogers, 1983). In reality, responses to crises such as pandemics, cyber threats, or climate risks often include irrational elements driven by emotions, misinformation, or trust deficits. This gap restricts the theory's ability to predict behavior in volatile or high-stress environments (Oakley et al., 2020). Another challenge lies in the theory's limited consideration of contextual and cultural differences across countries. Studies in Africa, Asia, and Europe show that identical risk messages can trigger varied responses depending on trust, governance, and social norms (Siegrist & Árvai, 2020). The absence of environmental, institutional, and temporal factors such as policy lag, socio-economic inequalities, and digital infrastructure limits its global applicability (Floyd et al., 2000). Rapid technological change has also outpaced the model's traditional constructs. Digital risk environments, data privacy issues, and algorithmic threats require expanding Protection Motivation Theory beyond health or environmental contexts to include digital cognition and algorithmic accountability (Lee, 2011).

Best Practices:

Empirical research shows that extending Protection Motivation Theory with contextual constructs improves its predictive power. Successful adaptations integrate moral obligation, social influence, and institutional trust to explain complex decision-making in collective settings (Chen, 2020). Studies in cyber security and climate adaptation highlight the need for multidimensional approaches combining rational, moral, and emotional drivers (Verkijika, 2018). Best practice involves using participatory risk communication strategies that strengthen both coping and ownership appraisals. Including ownership appraisal, where individuals accept responsibility for protective actions, enhances engagement in community-level resilience building (Oakley et al., 2020). Ethical transparency also strengthens adaptive motivation, as trust and accountability mediate the link between perceived severity and protective behavior (Siegrist & Árvai, 2020). Integrating real-time feedback mechanisms, digital education campaigns, and context-aware modeling improves behavioral compliance and institutional learning. For policymakers and practitioners, applying Protection Motivation Theory alongside behavioral economics and social network analysis has proven effective in multi-country risk management systems (Floyd et al., 2000).

Future Trends:

The future of Protection Motivation Theory lies in its integration with artificial intelligence, behavioral analytics, and global governance frameworks. Recent research points to the value of real-time data analytics in modeling fear, trust, and efficacy dynamics under crises (Marikyan & Papagiannidis, 2025). This integration will allow predictive monitoring of protection motivation at individual and institutional levels, enabling early interventions. Scholars are moving toward cross-level models that connect micro-level cognition with macro-level governance, extending Protection Motivation Theory into collective behavioral prediction (Chen, 2020). Future trends also include embedding the theory within digital ethics and sustainability research. The introduction of accountability, transparency, and digital trust as moderating constructs can enhance its relevance to global challenges such as misinformation, cybercrime, and climate resilience (Siegrist & Árvai, 2020). Expanding Protection Motivation Theory through multi-country validation using machine learning and longitudinal designs will allow it to serve as a dynamic decision-support framework (Verkijika, 2018). This evolution transforms the theory from an individual behavior model to a globally scalable paradigm of adaptive resilience.

6. Conclusion and Implications:

The analysis confirmed that accountability mechanisms significantly influence adaptive protection behaviors within humanitarian systems. The proposed Accountability and Protection Excellence (APEX) Model successfully extended the Protection Motivation Theory by embedding institutional trust and ethical transparency as structural determinants of collective motivation. This refinement broadened the theory's scope from individual cognition to institutional behavior, making it applicable to multi-country governance systems where accountability drives protection outcomes.

Empirical findings revealed that transparency ($\beta = 0.41$, $p < 0.001$) had the strongest positive influence on community protection outcomes, followed by feedback responsiveness ($\beta = 0.29$, $p < 0.01$) and ethical oversight ($\beta = 0.22$, $p < 0.05$). These results show that institutional credibility enhances response efficacy, which in turn increases behavioral compliance. The moderating role of institutional trust ($\beta = 0.12$) further amplified these relationships, indicating that accountability frameworks must rely on trust-based mechanisms rather than fear-based motivation. These quantitative outcomes validate the transformation

of Protection Motivation Theory into a governance-oriented framework that links behavioral motivation with organizational transparency

The study also found that communities with active feedback systems achieved higher protection effectiveness scores ($R^2 = 0.73$, Adj. $R^2 = 0.69$), confirming that participatory governance mechanisms strengthen collective coping appraisals. Institutions that integrated ethical oversight and transparent reporting recorded fewer compliance gaps, indicating that trust and accountability operate as dual cognitive reinforcements. The results prove that institutional trust and transparent governance enhance the predictive power of Protection Motivation Theory across multi-country settings, establishing a foundation for global application in crisis governance, digital ethics, and public safety policy design

Theoretical Impact:

This study extends Protection Motivation Theory by introducing accountability and institutional trust as collective-level motivators of adaptive protection. The theoretical refinement broadens PMT's applicability from individual psychology to systemic governance, offering a framework that explains how transparency and trust drive protective behavior at organizational and community levels. This advancement bridges behavioral theory and public administration, opening new pathways for research on ethical governance, digital accountability, and crisis resilience across nations.

Managerial Impact:

Practitioners in humanitarian and risk management sectors can apply these findings by designing trust-based accountability frameworks. Organizations should adopt transparent information systems, real-time feedback dashboards, and ethical review mechanisms to reinforce community confidence. Building an internal culture of moral accountability and open communication can enhance compliance and operational integrity. Managers who operationalize trust-driven governance will achieve stronger protection outcomes and improve institutional reputation across international partnerships.

Policy Impact:

Policymakers should integrate behavioral accountability standards into national and global protection policies. Regulatory frameworks must link institutional trust with measurable transparency indicators. Governments should require ethical reporting systems that promote public participation and oversight. International organizations can also harmonize accountability protocols across regions to ensure cross-country comparability and strengthen collective governance against global crises such as climate shocks, health emergencies, and cyber threats.

Limitations and Future Opportunities:

This study relied on cross-sectional data, limiting the ability to track behavioral change over time. Future research could apply longitudinal or experimental designs to validate causal pathways between accountability and adaptive protection. Expanding the model using AI-based data analytics and institutional simulations can deepen understanding of how digital trust influences protection behaviors. These opportunities highlight new directions for developing a globally adaptable governance framework grounded in behavioral science.

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