

From Compliance to Reflection: Constructing Sustainability Reporting in the Public Sector through a Constructivist Grounded Theory Approach

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ABSTRACT: Sustainability reporting in the public sector is often positioned as a technical and compliance-based governance tool; however, its practical implementation remains fragmented, inconsistent, and highly context-dependent. This study reconceptualizes public sector sustainability reporting as a socially constructed governance practice shaped by institutional pressures, ethical considerations, and interorganizational interactions. Employing a constructivist grounded theory methodology supported by an exploratory sequential mixed-methods design, the study investigates how sustainability reporting is interpreted, enacted, and continuously reshaped within public organizations. The findings indicate that formal governance structures alone are insufficient to explain reporting practices. Instead, sustainability reporting emerges through iterative and interpretive processes involving moral accountability, negotiated transparency, legitimacy construction, and collaborative meaning-making among stakeholders. These processes collectively form what this study defines as reflective governance, a dynamic organizational capability characterized by reflexivity, dialogue, and continuous learning in interpreting sustainability information. Reflective governance operates as a mediating mechanism between institutional conditions and actual reporting practices, extending traditional institutional and accountability theories that often neglect interpretive and processual dimensions of governance. This study contributes to public sector accounting and sustainability literature by demonstrating that reporting quality is not solely determined by compliance with standards, but by the organization's capacity for reflection and learning. Methodologically, it highlights the value of constructivist grounded theory in capturing the complexity of governance practices in real-world institutional settings. The study concludes that enhancing sustainability reporting requires strengthening organizational reflexivity, participatory interpretation, and learning-oriented governance rather than relying exclusively on formal disclosure frameworks.

Keywords: Reflective governance, Sustainability reporting, Constructivist grounded theory, Public sector accountability, Institutional legitimacy.

I. INTRODUCTION

The global push for transparency, accountability, and long-term value creation is growing. Examples include the Sustainable Development Goals. Sustainability reporting has emerged as a popular tool for promoting public governance. In the public sector, however, sustainability reporting takes place within a politically fragmented and contested institutional context [1, 2]. The content of reporting practices is shaped by competing stakeholder interests. The objectives of reporting practices are also shaped by these interests. Administrative complexities also shape reporting practices. So do the information and power asymmetries exist in such environments. Despite the proliferation of sustainability reporting frameworks, concerns have been raised that these may not contribute to significant policy and decision-making changes [3–5]. A body of research has emerged suggesting a disconnection between the formal adoption of sustainability reporting in the public sector and the substantive actions taken. Reports in this field have been found to prioritize compliance, coherence, and positive narratives while disregarding ambiguity, failure, or contestation [6–9]. This institutional interpretation is often informed by the infectious pressures that generally prioritize compliance over transformation [10, 11]. In addition, legitimacy theory posits that reporting functions as a symbolic resource, facilitating the acquisition of social acceptance [12]. However, such explanations risk normalizing selective visibility, in which reporting practices reproduce rather than critically engage with existing power relations.

The assertion that transparency is inherently emancipatory has recently been the subject of scrutiny in research, which instead conceptualized it as a negotiated, mediated, and inscribed phenomenon by the interests and power dynamics of an organization [13, 14]. Concurrently, the field of accountability scholarship has focused more intently on ethical responsiveness and dialogic engagement as integral elements of meaningful reporting [1, 15, 16]. Furthermore, extant literature on collaborative governance highlights inter-organizational interaction as a pivotal factor that influences reporting processes [17]. However, the existing literature is still somewhat fragmented in theory. When discussing perspectives on institutional, ethical, and relational aspects, it is important to provide sufficient explanations of how these dimensions interact to yield either symbolic or substantive reporting outcomes. There appears to be a lack of awareness regarding the procedural mechanisms through which governance conditions are interpreted, negotiated, and translated into reporting practices within public organizations.

To address this gap, the study proposes the concept of reflective governance as a unifying framework that synthesizes how organizations absorb and interpret governance pressures via reflexive, dialogic, and learning-oriented processes. Rather than considering governance reflexivity to be a stable characteristic, we examine it within the framework of reporting practices as an active process of critical questioning, engagement, and situational interpretation [18,19]. This viewpoint refocuses analysis on the organizational processes that generate and negotiate meaning, thereby enhancing a more process-oriented comprehension of sustainability reporting. Methodologically, this study adopts an exploratory sequential mixed-methods approach, integrating constructivist grounded theory (CGT) and PLS-SEM. Historically, this approach has facilitated the identification of contextually situated constructs through qualitative research and subsequent statistical testing of relationships among constructs. In complex governance scenarios, this is particularly pertinent, as quantitative analysis can fail to capture the underlying interpretive processes [20, 21]. Recent studies have demonstrated the efficacy of integrating both qualitative and quantitative methods to advance our understanding of sustainability and governance phenomena [7, 22, 23]. This study contributes to the existing literature by offering a more comprehensive understanding of how governance conditions influence sustainability reporting practices through reflective processes, combining interpretive insights with quantitative modeling.

The remainder of this paper is organized as follows. The theoretical framework and hypothesis development are presented in Section II. Section III provides a detailed description of the research methodology. In section IV, the empirical results are presented, and section V discusses the study's implications for both theory and practice.

II. LITERATURE REVIEW AND THEORETICAL DEVELOPMENT

1. THEORETICAL FOUNDATION

We demonstrate how public sector sustainability reporting has evolved from a purely administrative disclosure tool into a comprehensive governance framework, driven by legitimacy pressures, ethical obligations, and interorganizational dynamics. This evolution is illustrated using a covenant framework. As the literature highlights, reporting occurs within fragmented administrative systems, where competing stakeholder interests prevail, along with considerations of political accountability and information asymmetries [1–3]. Although frameworks such as the Sustainable Development Goals (SDGs) and integrated reporting favor standardization, their application often reveals tensions between compliance-led disclosure and more substantive forms of accountability [5, 24]. From an institutional perspective, sustainability reporting is often conceptualized as a reaction to legitimacy pressures and organizational drivers [10, 12]. Meanwhile, the field of accountability scholarship highlights its moralizing value and dialogic dimensions, emphasizing the need to engage multiple non-financial stakeholders to maintain public trust [16, 25]. Furthermore, the collaborative governance literature highlights the importance of interorganizational coordination and shared interpretation in shaping reporting practices [17, 23].

Despite these contributions, the current literature remains conceptually disconnected, failing to adequately account for the integration of institutional pressures, ethical considerations, and multi-stakeholder interactions into meaningful reporting practices [2, 26–28]. To address this challenge, this paper proposes reflective governance as a unifying concept that captures an organization's capacity to interpret, negotiate, and assimilate governance conditions through reflexive and dialogic processes [15, 26, 29, 30]. Instead of focusing on the outcomes of placements resulting from governance structures, reflective governance seeks to understand how these structures are interpretively operationalized within organizations. A more process-based approach to understanding sustainability reporting is recommended here, since the differences in quality of reporting are not only due to external needs but also to the way in which internal capacity is actively constructed for reflection, learning, and adaptive interpretation [31].

2. GOVERNANCE ANTECEDENTS AND REFLECTIVE SUSTAINABILITY REPORTING

It is widely acknowledged that governance factors play a significant role in shaping the nature and quality of sustainability reporting, particularly in terms of how they influence disclosures that go beyond mere symbolic compliance and move towards more substantial voluntary practices [32–36]. From an accountability standpoint, moral accountability [16, 25, 37], has been linked to enhancing ethical awareness and encouraging public officials to provide balanced and transparent information that covers limits and challenges. Transparency is consistently negotiated, which attests to the socially constructed quality of disclosure. This is based on reporting content that is often the result of interaction, interpretation, and internal negotiation rather than adherence to standard templates [13, 14, 38]. Secondly, institutional legitimacy influences reporting practices by encouraging organizations to respond to external expectations. However, as this occurs, a common phenomenon in the organizational field is that symbolic conformity competes with actual accountability [12]. Furthermore, collaborative governance facilitates cross-sector coordination and integration of isolated data sets, contributing to more contextualized reporting practices [23, 39].

Furthermore, even if these governance conditions are in place, prior studies have not examined whether they yield substantive reporting outcomes. This is because organizations may only demonstrate ceremonial compliance, rather than providing substantial disclosure [7, 40–42]. This suggests that governance antecedents may have limited explanatory power, particularly in multifaceted public-sector contexts where higher-quality reporting outcomes can be achieved. In alignment with the interpretive and mixed-methods approaches, governance processes are defined not merely as structural conditions but as socially constructed practices. It is important to note that these practices may take on different meanings depending on the organizational context [21, 43]. It is therefore advantageous to ascertain the immediate connection between governance antecedents and sustainability reporting. This establishes an essential baseline for understanding

how formal governance mechanisms influence reporting practices. It is also important to acknowledge potential boundaries in its direct effects. Based on these arguments, the following hypotheses are proposed:

- H1. Moral accountability positively affects reflective sustainability reporting.
- H2. Negotiated transparency positively affects reflective sustainability reporting.
- H3. Institutional legitimacy positively affects reflective sustainability reporting.
- H4. Collaborative governance positively affects reflective sustainability reporting.

3. GOVERNANCE ANTECEDENTS AND REFLECTIVE GOVERNANCE

Governance antecedents will shape governance outcomes, as well as the internal capacities facilitating reflective governance in public organizations. The concept of moral accountability emphasizes the importance of ethical considerations in the reporting process [15, 25, 26, 44]. The same is true of negotiated transparency, which also has the potential to expose organizations to competing interpretations of what is to be disclosed and therefore leads more towards reflexive dialogue and engagement with interpretation than towards mere procedural compliance [13, 14, 45]. Organizations must balance external expectations of credibility and conformity with internal constraints and operational realities. Studies [2, 12, 46, 47] have described this balance as 'institutional legitimacy pressures.'

The enhanced reflective governance facilitated by collaborative governance is evident through its promotion of cross-boundary interaction, joint sense-making, and adaptive problem-solving among actors with diverse roles, interests, and knowledge bases [17, 23, 39, 48]. In this context, the concept of reflective governance is best understood as an organizational capacity driven by dialogue, learning, and reinterpretation, based on the reciprocal interaction of ethical commitments (*for example, related to values*), legitimacy needs (*for example, related to accountability*), and negotiations about transparency [49], and collaborative processes [15, 26, 29, 50]. Exploring the connection between governance antecedents and reflective governance is therefore vital to understand how public organizations cultivate the internal capacity to cope with complexity and uncertainty when reporting on sustainability [31,51]. Based on this reasoning, the following hypotheses are proposed:

- H5. Moral accountability positively affects reflective governance.
- H6. Negotiated transparency positively affects reflective governance.
- H7. Institutional legitimacy positively affects reflective governance.
- H8. Collaborative governance positively affects reflective governance.

4. REFLECTIVE GOVERNANCE AND SUSTAINABILITY REPORTING

It is anticipated that reflective governance will enhance sustainability reporting practices among public organizations, moving beyond procedural compliance to more substantive, learning-oriented, and context-sensitive reporting. Reflective governance is a concept grounded in organizational learning and dialogic accountability. It enables actors to question underlying assumptions, promotes the use of feedback, and allows reporting to be embedded into evaluation and policy improvement [15, 26, 29, 50]. Therefore, sustainability reporting is not just a compliance exercise aligned with disclosure; it serves as a governance mechanism via which organizations are rendering accounts of their performance, grappling with limitations, and simulating responses for the future [54, 55].

This view is supported by previous research, which has shown that impact reporting is more effective when it is integrated into processes of reflection, discussion, and organizational learning, rather than being viewed as a mere external accountability requirement [16, 19, 28, 53, 54]. Reflective governance is therefore theorized as a primitive enabling condition of reflective sustainability reporting, as it enables organizations to make disclosures that are more balanced, adaptive, and meaningful in respect of complex public-sector realities. This approach also responds to the theoretical (and literature-based) call for outcomes not to be explained solely by structural governance conditions. Instead, attention must be paid to the processes of interpretation that lead to the reification of such conditions through practice [2, 55–57]. Based on this reasoning, the following hypothesis is proposed:

- H9. Reflective governance positively affects reflective sustainability reporting.

5. REFLECTIVE GOVERNANCE AS A MEDIATING MECHANISM

In light of this, the concept of reflective governance is presented as an intermediary mechanism. This mechanism can explain how the antecedents of governance drive sustainability reporting practices by public organizations. Rather than anticipating that subjective factors such as moral accountability, negotiated transparency, institutional legitimacy, and collaborative governance will directly result in specific reporting outcomes, this research supports the notion that their effects will depend on the extent to which organizations can develop internal capabilities for self-reflection, dialogue, and sense-making. As suggested by many relevant literature sources, governance structures and pressures can result in a range of reporting outcomes, from mere cosmetic compliance to more meaningful disclosure processes. The exact nature of these outcomes is dependent upon how such contexts are interpreted and enforced in practice [6, 32, 33]. In this context, the term "reflective governance" refers to a methodical approach to understanding how organizations respond to governance requirements thoughtfully, guided by learning-based and dialogic processes [15, 17, 29].

Reflective governance can act as a mediating mechanism in the relationship between governance antecedents and sustainability reporting [58, 59]. In other words, it can be a tool to measure the impact of governance on sustainability reporting. This is important as it avoids a wholly deterministic path or the assumption of a homogenous impact across contextual lines. This is in line with the findings of recent research, which has begun to acknowledge that transparency and accountability are not merely by-products of formal structures but rather outcomes of mediated and negotiated processes involved in organizational sensemaking [9, 38, 60]. Furthermore, it addresses calls in the literature on organizational development that stress the importance of enhancing interpretive capabilities and reflexive learning inside organizations to understand better how comparable institutional settings result in differing perspectives on ongoing reporting [31, 52, 56]. In line with this and recognizing that the conditions for governance can be translated into more or less reflective (and context-sensitive) sustainability reporting practices only through an intermediate mechanism, this study argues for a link between reflection and explanation. Based on this reasoning, the following hypotheses are formulated:

- H10. Reflective governance mediates the relationship between moral accountability and sustainability reporting.
- H11. Reflective governance mediates the relationship between negotiated transparency and sustainability reporting.
- H12. Reflective governance mediates the relationship between institutional legitimacy and sustainability reporting.
- H13. Reflective governance mediates the relationship between collaborative governance and sustainability reporting.

6. CONCEPTUAL FRAMEWORK AND THEORETICAL POSITIONING

Adopting a conceptual framework rooted in Constructivist Grounded Theory (CGT), this study perceives sustainability reporting as a socially constructed practice developed through interaction, interpretation, and negotiated meaning amongst organizational actors [30, 61–63]. From this perspective, governance antecedents' moral accountability, negotiated transparency, institutional legitimacy, and collaborative governance are not strictly exogenous factors. Instead, they are interpreted and acted upon differently depending on the organizations in question. This approach aligns with previous studies highlighting the discursive, value-laden, and complex nature of accounting and sustainability reporting. These studies emphasize that such reporting is better understood through continuous sensemaking and negotiation activities rather than neutral performance representation [53, 55, 57, 64]. In this framework, reflective governance is shown to mediate reporting practices through reflexivity, dialogue, and learning to translate governance conditions.

In principle, the framework provides a useful foundation for understanding institutional, ethical, and relational perspectives. Previous studies have often treated these aspects separately, but the new framework

brings them together [2, 7, 56]. A processual and interpretive stance on causes of sustainability reporting is adopted, positioning it as a dependent outcome of how organizations systemize the idea or pressure for governance through reflexive capabilities. This is in contrast to positioning organizational sustainability reports as either purely structurally determined or wholly selection-based. This positioning aligns with postmodern and critical accounting perspectives that view reporting as an evolving and contested practice influenced by power, discourse, and organizational learning [15, 31, 53]. The conceptual framework presented in Figure 1 provides a valuable analytical lens, demonstrating how governance antecedents interact with reflective governance practices to achieve more reflective and context-sensitive sustainability reporting.

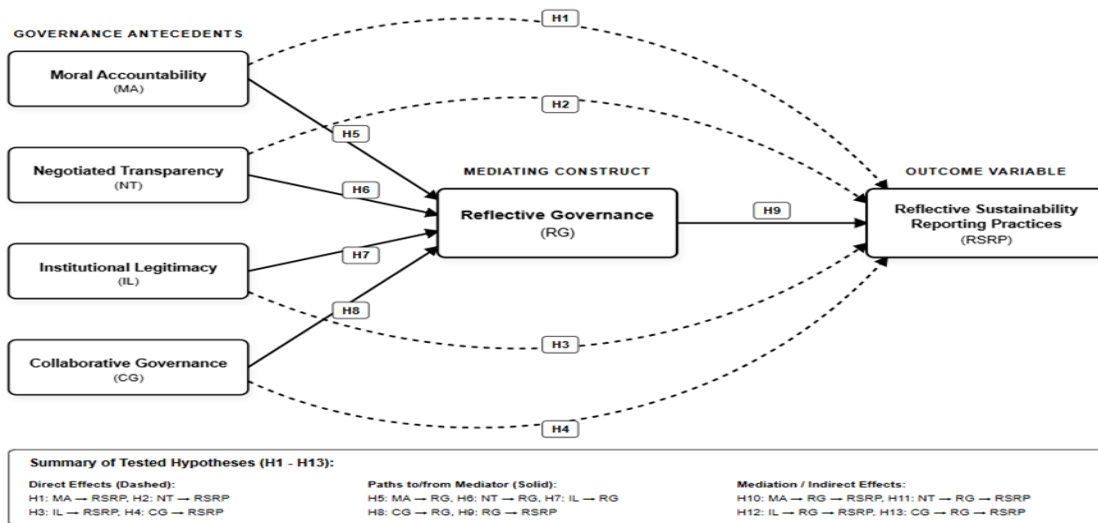


FIGURE 1. Conceptual framework of reflective governance and sustainability reporting.

III. METHOD

1. RESEARCH PHILOSOPHY AND PARADIGMATIC POSITIONING

The study is based on an interpretive–constructivist paradigm [18, 65, 66], which regards sustainability reporting as a socially constructed practice. This is informed by meaning, interaction, and institutional context, rather than an objective representation of organizational performance. From this standpoint, accountability and transparency can be seen as negotiated, contextually informed processes. They emerge through the interaction of organizational actors [15, 26, 27, 53]. This framework facilitates the study's examination of how public officials comprehend and execute sustainability reporting within intricate bureaucratic environments.

The study employs the method of Constructivist Grounded Theory (CGT), an approach that emphasizes the collaborative construction of knowledge between the researcher and the participant while also allowing for the emergence of theory-driven insights grounded in empirical data [53,62]. This perspective draws on institutional theory and dialogical accounting to explain reporting practices that emerge when there is pressure for legitimacy, ethical reasoning, and stakeholder engagement [10, 12, 26]. Recent studies have highlighted the growing influence of institutional complexity and digital transparency on sustainability reporting. This emphasizes the continued significance of an interpretive and process-oriented approach [31,52].

2. RESEARCH CONTEXT AND INSTITUTIONAL SETTING

The East Java Provincial Government provides a relevant context for this study, given its administrative scale, institutional diversity, and recent initiatives to adopt sustainability-oriented governance practices. For instance, the adoption of Sustainable Development Goals (SDGs) into regional plans and the implementation of digital transparency measures, exemplified by Open Data Jawa Timur, point to an increasing institutional commitment to accountability and public disclosure [67, 68]. However, decentralized governance introduces coordination challenges that are characteristic of subnational governments [9, 69, 70].

Institutional dynamics such as regulatory compliance, political expectations, and legitimacy pressures influence reporting practices, often resulting in conflicting pressures between legal compliance and substantial accountability [19, 54, 59]. Reporting processes are a collaborative effort across multiple organizational units, including planning agencies, financial authorities, and inspectorates. To provide transparency, we have included a detailed report on the respondents' characteristics and the events in Appendix A1. This enables contextual interpretation and evaluation of the analytical rigor.

3. QUALITATIVE RESEARCH DESIGN: CONSTRUCTIVIST GROUNDED THEORY

The qualitative phase utilizes constructivist grounded theory (CGT) to examine how public officials construct and negotiate definitions of sustainability reporting. CGT was a suitable approach in light of its iterative coding processes and its view on theory generation as being rooted in practice [71–73]. These augurs align with the interpretive accounting lenses that accept reporting to be socially constructed and dialogic [15, 51, 53, 74].

Through the use of semi-structured interviews, document analysis, and observations across relevant governmental units, we were able to triangulate data and provide a more comprehensive context [65]. The coding process was conducted in an open, focused, and theoretical manner. The integrated coding framework, incorporating categories, ranges of code allocation, and the interpretation process, is outlined in Table 1. This demonstrates the systematic transformation of empirical data into analytical constructs, including reflective governance and reflective sustainability reporting. CGT has been increasingly used in sustainability and governance research to explain dynamic implementation processes and evolving institutional meanings [75–77].

Table 1. Coding structure of the interview protocol.

Coding	Analytical Category	Code Range	Analytical Focus	Interpretive Contribution
Open Coding	Moral Accountability	MA-INT1 – MA-INT3	Ethical responsibility, moral obligation, and public service values in sustainability reporting	Captures how actors construct reporting as an ethical commitment to society
Open Coding	Negotiated Transparency	NT-INT1 – NT-INT3	Internal negotiation of disclosure practices and openness–risk trade-offs	Reveals how transparency is socially negotiated across organizational units
Open Coding	Institutional Legitimacy	IL-INT1 – IL-INT3	Legitimacy-seeking behavior, reputation management, and symbolic reporting	Explains how reporting practices reinforce institutional legitimacy
Open Coding	Collaborative Governance	CG-INT1 – CG-INT3	Inter-agency coordination, data integration, and cross-sector collaboration	Identifies collaborative dynamics shaping reporting processes
Focused Coding	Reflective Governance	RG-INT1 – RG-INT3	Organizational learning, reflexive dialogue, and policy integration	Synthesizes recurring patterns related to governance reflexivity

Coding	Analytical Category	Code Range	Analytical Focus	Interpretive Contribution
Focused Coding	Reflective Sustainability Reporting Practices	RSRP-INT1 – RSRP-INT3	Substantive reporting, impact orientation, and balanced disclosure	Explains the transformation toward more reflective reporting practices
Axial / Cross-Cutting Coding	Cultural Values and Institutional Learning	VAL-INT1, PROC-INT1	Public service ethos, ethical values, and organizational transformation	Connects cultural and processual dimensions influencing reporting practices
Theoretical Coding	Core Category: Reflective Sustainability Reporting	Integrated Codes	Moral reasoning, negotiated transparency, legitimacy work, and collaborative coordination	Integrates all categories into a substantive theoretical framework

Source; Author 2026.

4. QUANTITATIVE RESEARCH DESIGN AND MEASUREMENT MODEL

The quantitative phase employs an exploratory sequential mixed-methods design, leveraging qualitative findings to inform the development of constructs and measurement instruments [21, 78–80]. Constructs derived from the qualitative phase – including moral accountability, negotiated transparency, institutional legitimacy, collaborative governance, reflective governance, and reflective sustainability reporting were transformed into latent variables using multi-item indicators adapted from existing literature, such as [9, 19]. The measurement model utilizes a reflective specification, in line with governance and sustainability studies [81]. We collected data on a five-point Likert scale, and the analysis was performed through Partial Least Squares Structural Equation Modeling (PLS-SEM), an advanced statistical method that enables the development of complex models and is commonly used for prediction purposes [82, 83]. The robustness, reliability, and validity of the measurement were examined using composite reliability, Average Variance Extracted (AVE), and discriminant validity (HTMT).

5. SAMPLING STRATEGY AND DATA ANALYSIS

A phased sampling strategy was employed to ensure analytical depth and empirical robustness. In the qualitative phase, purposive and theoretical sampling were used to select key informants directly involved in the sustainability reporting process. This enabled the identification of information-rich cases and the achievement of theoretical saturation as described [84, 85]. The phase that focused on numbers used a proportional, stratified sampling method to capture variation across organizational units and roles. This was done to enhance representativeness and reduce bias [97, 98]. The study employs a sequential design, underpinned by an exploratory mixed-method approach. This approach involves utilizing qualitative insights to inform subsequent quantitative validation, to enhance contextual depth and generalizability [43, 78].

Quantitative analysis followed a two-stage PLS-SEM procedure: first, the measurement model was evaluated, and second, the structural model was assessed. Structural relationships were evaluated using path coefficients (R^2), effect size (f^2), and predictive validity (Q^2). Mediation effects were tested using bootstrapping techniques [81, 83]. To ensure methodological rigor, it was necessary to interpret mediation results with caution, treating them as indications rather than definitive causal relationships. Mixed-methods research can pose challenges, including increased time demands, greater resource requirements, and a need for broader methodological expertise. It also offers significant advantages. The ability to combine different methodologies and achieve more in-depth analytical insights is a major advantage of mixed-methods research. Integrating qualitative and quantitative approaches has been shown to enhance conceptual rigor,

broaden analytical perspectives, and support the development of stronger explanations of complex governance phenomena [7, 90].

IV. RESULTS

1. QUALITATIVE FINDINGS FROM CONSTRUCTIVIST GROUNDED THEORY

Based on constructivist grounded theory (CGT), the qualitative findings offer insights on how sustainability reporting is interpreted in and enacted within public sector organizations. The open coding phase showed, as depicted in Table 2, that reported practices are determined by multiple and even competing constructs. These comprise normative factors, including moral responsibility and public service values; administrative compliance requirements; coordination difficulties, and vulnerabilities related to political sensitivity or disclosure risk. Such findings are in line with CGT's focus on participants lived experiences and sense-making processes, where organizational practices are not predetermined but co-constructed through interaction and context [61, 73, 84, 85]. However, other grounded theory studies in sustainability contexts have also found that it is not purely formal structures that determine organizational practices [58, 59]. The presence of both symbolic and substantive elements suggests that reporting practices are negotiated within an intermediary space between institutional imperatives and practical constraints. This is consistent with previous CGT-based studies suggesting that governance and sustainability practices engage multi-tiered socio-ecological and organizational forces, in which actors navigate normative commitments, operational realities, and environmental pressures [7, 91–93]. Thus, sustainability reporting in this regard is no longer a mere administrative output but is rooted in contextualized social processes, reflecting how public actors interpret, negotiate, and respond to multiple institutional and societal pressures.

Table 2. Open coding categories of sustainability reporting practices.

No.	Open Coding Category	Description	Illustrative Initial Codes
1	Moral Responsibility to Society	Officials understand sustainability reporting as an ethical obligation, rooted in public service values and a sense of Amanah toward society.	"Moral duty," "public service," "social responsibility," "Amanah"
2	Administrative Compliance	Reporting is often driven by formal requirements, emphasizing procedural completion rather than substantive engagement.	"Regulatory compliance," "standard format," "mandatory reporting"
3	Interdepartmental Coordination Challenges	Differences in data, timing, and interpretation across agencies create practical difficulties in producing coherent reports.	"Data mismatch," "unsynchronized indicators," "delayed submission"
4	Symbolic Reporting Practices	Reporting sometimes functions as a symbolic act, reflecting institutional image-building rather than substantive accountability.	"Ritual reporting," "image building," "political signaling"
5	Risk and Sensitivity in Disclosure	Decisions about disclosure are shaped by concerns over political sensitivity and potential public misinterpretation.	"Sensitive data," "risk of misunderstanding," "political concern"
6	Learning and Reflexivity	The reporting process creates moments for reflection, allowing officials to evaluate programs and identify areas for improvement.	"Reflection," "evaluation," "policy learning"
7	Cross-Sector Data Integration	Sustainability reporting requires integrating environmental, social, and economic data across organizational boundaries.	"SDG alignment," "cross-sector data," "integration"

The transition from open to focused coding, as illustrated in Table 3, demonstrates how these categories align analytically into broader interpretative processes and classes. The findings help explain how sustainability reporting can be seen as a strategic practice agreed upon between the agency of ethical responsibility and the mechanism of administrative needs. Transparency is created through a collaborative process of contextual interpretation. Such patterns highlight the interpretative qualities of accounting practices, which are increasingly recognized as socially constructed and dialogic in nature [27, 28]. In this sense, the qualitative evidence supports the idea that reporting processes are part of how organizations make sense of things. This means that the people in these organizations constantly interpret and redefine what is expected of them [47].

Table 3. Focused coding categories and illustrative participant quotations.

Category	Conceptual Interpretation	Illustrative Quotations
Negotiating Accountability	Officials navigate between ethical commitments and administrative demands, positioning reporting as both a duty and a requirement.	"We do not prepare this report only because it is required, but because it reflects our responsibility to society." (P03)
Performing Transparency	Transparency is not fixed; it is shaped through internal dialogue, negotiation, and consideration of potential risks.	"Each unit understands transparency differently, and sometimes we need to find a middle ground." (P07)
Legitimacy-Seeking Practices	Reporting becomes a means of demonstrating institutional credibility and alignment with broader sustainability expectations.	"The report shows that we are serious about sustainability commitments." (P11)
Collaborative Meaning-Making	Sustainability is interpreted collectively through interactions across departments, requiring alignment of perspectives.	"Before finalizing the report, we need to ensure everyone shares the same understanding." (P16)
Reflexive Learning Practices	Reporting provides space for reflection, enabling organizations to learn from past performance and improve future actions.	"Through reporting, we realize what worked and what needs to change next year." (P05)

By analyzing these processes and identifying common features (higher-order themes), as outlined in Table 4, it becomes evident that sustainability reporting is a social practice characterized by its value-laden nature. The identified themes, moral accountability, negotiated transparency, legitimacy work, and collaborative governance, suggest that reporting is not solely a compliance process but rather one shaped by ethical sense-making, institutional pressures, and interorganizational interplay. This is in line with CGT's capacity to develop substantial theory that is firmly rooted in empirical data, thereby identifying patterns that interweave individual processes with broader contextual and societal dynamics [61, 75]. The importance of legitimacy and symbolic elements is also a key theme in extant literature on public sector reporting. Disclosure is frequently employed to serve both accountability and reputational objectives.

Table 4. Final Emergent Themes and Underlying Processes

Final Emergent Theme	Description	Underlying Processes
Reporting as Moral Accountability	Reporting is framed as an ethical responsibility, reflecting a commitment to serve society beyond formal obligations.	Moral reasoning, public service values, and ethical awareness
Transparency as a Negotiated Social Process	Transparency emerges through ongoing negotiation, balancing openness with organizational and political considerations.	Interpretation, risk assessment, disclosure negotiation

Final Emergent Theme	Description	Underlying Processes
Sustainability Reporting as Legitimacy Work	Reporting functions as a mechanism to sustain institutional credibility and align with external expectations.	Legitimacy signaling, conformity, and symbolic practices
Collaborative Governance as Meaning Construction	Reporting is produced through collaborative processes where multiple actors contribute to a shared understanding.	Inter-agency coordination, joint interpretation, and alignment
Core Category: Reflective Sustainability Reporting	Sustainability reporting evolves into a reflective governance practice shaped by dialogue, learning, and institutional context.	Reflexivity, organizational learning, and dialogic accountability

The relationships between these themes are illustrated in the theoretical coding map, which summarizes the iterative coding process (Figure 2). The visualization illustrates how first-order categories are integrated into higher-order, core processes such as negotiating accountability, performing transparency, and collaborative sense-making. Groundedness is oriented in process, where relating and relationality are always at play. This indicates the nature of reporting practices not as static rules imposed upon practitioners but rather as complex acts of meaning constructed in interaction. The findings indicate the crucial role of CGT in elucidating the processual and interpretative dimensions of governance, particularly within intricate institutional frameworks [61, 65].

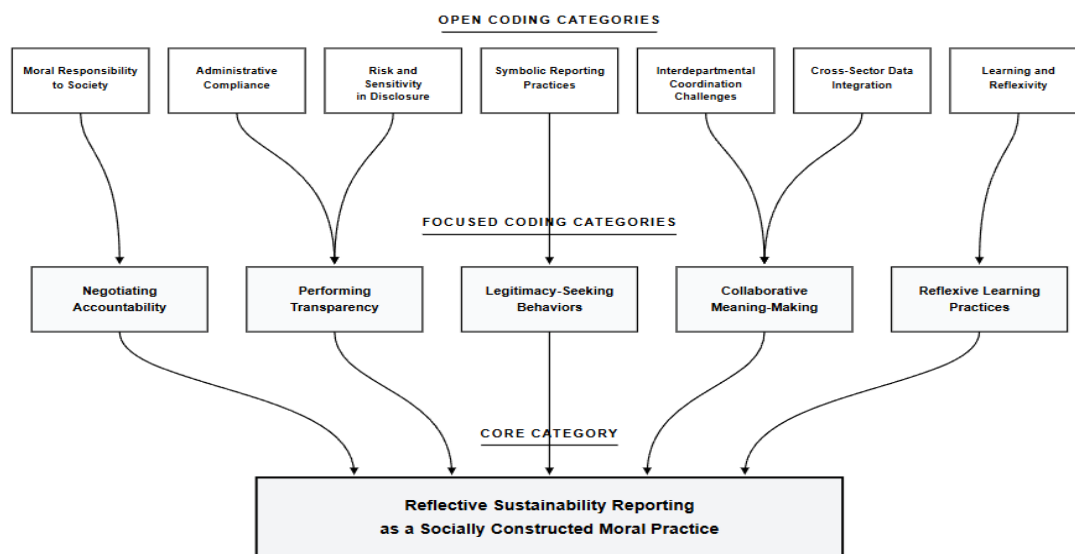


FIGURE 2. Theoretical coding map of sustainability reporting construction.

These processes have been integrated into the identification of reflective sustainability reporting as the core category, as illustrated in Figure 3. This core category represents a shift in perception, moving from viewing reporting as a final product to acknowledging it as a continuous, critical process shaped by learning, dialogue, and institutional context. The emphasis is on providing concrete illustrations of levels of reflexivity across networks as governance conditions are understood and implemented. It is important to note that these results do not suggest that all organizations achieve full reflective practices. This reading aligns with CGT

focus on theory as conditional and context-specific, emphasizing that organizational practices are always negotiated and reinterpreted in an iterative process [75, 84, 85].

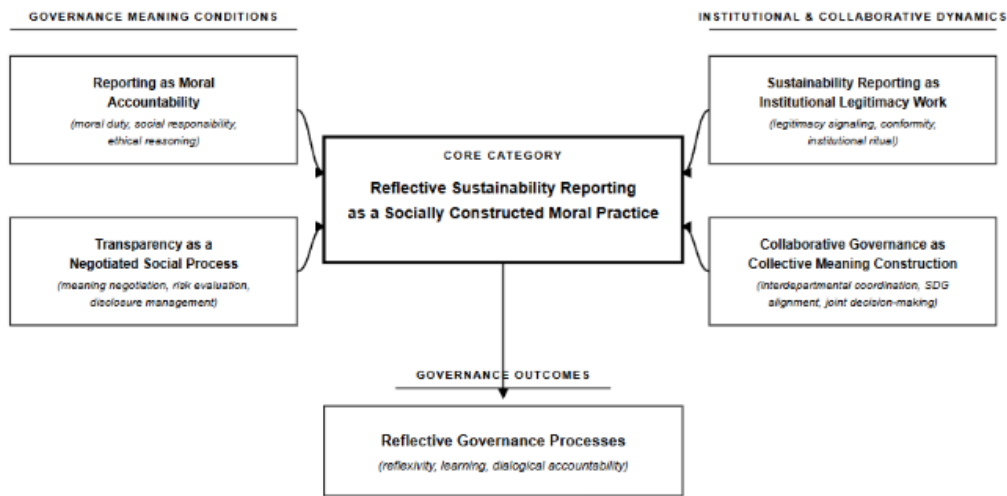


FIGURE 3. Substantive theory model of reflective sustainability reporting.

2. INTEGRATION OF QUALITATIVE THEMES INTO THE QUANTITATIVE MODEL

The qualitative results of the framework were systematically converted into a quantitative model via structured operationalization (see Table 5). Each emergent theme derived from the constructivist grounded theory approach has been mapped to the relevant latent construct, with subsequent refinement through the application of jointly measurable dimensions and indicators based on the accounts provided by the study's participants. This stage of the process is crucial in ensuring that the quantitative measure is closely aligned with empirically derived descriptions, thus preserving the interpretive integrity of the sample in the qualitative phase [61, 78, 87].

As illustrated in Table 5, the study's methodology successfully integrates both qualitative and quantitative elements. It demonstrates how categories such as moral accountability, negotiated transparency, institutional legitimacy, and collaborative governance, generated inductively, become testable constructs within the SEM framework. In this context, reflective governance is both a key qualitative category and a central mediating construct in the quantitative model [94]. This allows us to explore how internalization of governance conditions translates into sustainability reporting practices. This approach aligns with the principles of mixed-methods integration, emphasizing the interconnectedness of phases by considering data transformation and construct development. This enhances the explanatory richness and analytical robustness of a study [86, 87].

Table 5. Mapping of emergent qualitative themes to quantitative constructs and indicators.

CGT Emergent Theme	Conceptual Interpretation	Quantitative Construct	Measurement Dimensions	Representative Indicators
Reporting as Moral Accountability	Sustainability reporting is internalized as an ethical obligation grounded in public	Moral Accountability (MA)	Moral responsibility; Public service orientation;	Reporting is perceived as a moral duty to society; Officials consider ethical implications in reporting;

CGT Emergent Theme	Conceptual Interpretation	Quantitative Construct	Measurement Dimensions	Representative Indicators
Transparency as a Negotiated Social Process	service values and moral reasoning (<i>amanah</i>).	Negotiated Transparency (NT)	Ethical reflection	Reporting communicates societal value beyond technical outputs
	Transparency is constructed through interaction, negotiation, and balancing openness with organizational and political risks.		Inter-unit negotiation; Openness–risk balance; Interpretive transparency	Reporting content is negotiated across units; Different actors interpret transparency differently; Sensitive information is carefully evaluated before disclosure
Sustainability Reporting as Institutional Legitimacy Work	Reporting functions as a mechanism to signal conformity, credibility, and alignment with institutional expectations and global standards.	Institutional Legitimacy (IL)	Legitimacy signaling; Institutional conformity; Symbolic compliance	Reporting demonstrates commitment to sustainability; Reporting aligns with SDGs and formal standards; Reporting enhances institutional credibility and public trust
Collaborative Governance as Collective Meaning Construction	Reporting emerges from collaborative processes involving coordination, data sharing, and joint interpretation across organizational boundaries.	Collaborative Governance (CG)	Inter-agency coordination; Data collaboration; Cross-sector integration	Agencies coordinate in preparing reports; Data are shared across units; Multiple sectors contribute to sustainability reporting content
Reflective Sustainability Reporting (Core Category)	Sustainability reporting evolves into a reflective governance mechanism integrating ethical reasoning, learning, and institutional interpretation.	Reflective Governance (RG) > Reflective Sustainability Reporting Practices (RSRP)	Organizational learning; Reflective dialogue; Governance integration	Reporting stimulates cross-agency reflection; Reporting informs policy improvement; Reporting supports continuous learning and integration with planning systems

3. MEASUREMENT MODEL ASSESSMENT

Please refer to Table 6 for details of all the reflective indicators' outer loadings. It is evident that all items exhibit substantial loadings (ranging from 0.874 to 0.945) on their respective constructs, surpassing the recommended threshold of 0.70 [81]. Each indicator is a reliable measure of the latent variable it represents. It is noteworthy that constructs such as Moral Accountability (MA) and Reflective Governance (RG) exhibit remarkably high loadings (>0.90), indicating excellent indicator reliability and the uniformity of construct representation. The indicators did not need to be removed, indicating that the measurement specification is adequate at the indicator level and that the constructs are well-supported by empirical data.

Table 6. Outer loadings of reflective measurement indicators.

	CG	IL	MA	NT	RG	RSRP
CG1	0.924					
CG2	0.918					

	CG	IL	MA	NT	RG	RSRP
CG3	0.917					
CG4	0.899					
CG5	0.899					
CG6	0.905					
CG7	0.909					
CG8	0.918					
CG9	0.914					
IL1		0.874				
IL2		0.909				
IL3		0.911				
IL4		0.915				
IL5		0.9000				
IL6		0.8970				
IL7		0.9000				
IL8		0.8920				
IL9		0.9260				
MA1			0.9270			
MA2			0.9080			
MA3			0.9330			
MA4			0.9210			
MA5			0.9280			
MA6			0.9200			
MA7			0.9320			
MA8			0.9450			
MA9			0.9060			
NT1				0.9210		
NT2				0.9280		
NT3				0.9170		
NT4				0.9210		
NT5				0.9150		
NT6				0.9150		
NT7				0.9120		
NT8				0.9120		
NT9				0.9290		
RG1					0.9290	
RG2					0.9330	
RG3					0.9150	
RG4					0.9150	
RG5					0.8910	
RG6					0.9350	
RG7					0.9230	
RG8					0.9090	
RG9					0.9190	
RSRP1						0.9170
RSRP2						0.9130
RSRP3						0.9210
RSRP4						0.9090
RSRP5						0.9000

	CG	IL	MA	NT	RG	RSRP
RSRP6						0.9200
RSRP7						0.9080
RSRP8						0.9230
RSRP9						0.9130

Source; author 2026.

As demonstrated in Table 7, the Average Variance Extracted (AVE) metric is employed to achieve multidisciplinary convergent validity. All values are greater than the recommended threshold of 0.50 [81, 83], ranging from a minimum value of 0.815 to a maximum value of 0.855, to explain the variance of each construct indicator. Overall, these results underscore that the measurement items would converge well to account for their latent variables and thus provide adequate support for the constructs generated in the qualitative phase.

Table 7. Convergent validity assessment.

Construct	AVE
CG	0.8310
IL	0.8150
MA	0.8550
NT	0.8440
RG	0.8440
RSRP	0.835

Source; author 2026

Table 8 summarizes the internal consistency reliability estimations (Cronbach's alpha, rho_A, and composite reliability (rho_C)). The constructs have been found to demonstrate values between 0.972 and 0.981, respectively, which is significantly above the minimum threshold value of 0.70. The reliability of all twelve items is further confirmed, with the indication of a common problem of redundancy, since in reflective measurement models with highly correlated items, it is standard to have high reliability values. This observation underscores the necessity of carefully interpreting results, taking construct validity into account rather than relying solely on high reliability coefficients.

Table 8. Internal consistency reliability assessment.

Construct	Cronbach's alpha	(rho_a)	(rho_c)
CG	0.9750	0.9750	0.9780
IL	0.9720	0.9730	0.9750
MA	0.9790	0.9790	0.9810
NT	0.9770	0.9790	0.9800
RG	0.9770	0.9770	0.9800
RSRP	0.9750	0.9760	0.9790

As demonstrated in Table 9, the HTMT ratio is used to assess discriminant validity. All the HTMT values ranged from 0.345 to 0.705, which is below the conservative cutoff of 0.85 [95]. The research indicates that the constructs can be empirically discriminated and represent distinct conceptual domains. The maximum HTMT value appears between Reflective Governance (RG) and Reflective Sustainability Reporting Practices (RSRP). Theoretically, this is justified by their conceptual proximity, but the limit remains within acceptable parameters and demonstrates discriminant validity.

Table 9. Discriminant validity assessment using HTMT.

Matrix	CG	IL	MA	NT	RG	RSRP
CG						
IL	0.4090					
MA	0.3800	0.3450				
NT	0.5350	0.4570	0.4010			
RG	0.6520	0.5520	0.4850	0.6040		
RSRP	0.4710	0.3710	0.3970	0.4380	0.7050	

Finally, in Table 10, we present collinearity diagnostics using variance inflation factor (VIF) values. All VIF values range from 1.270 to 2.345, well below the widely used thresholds of 3.3 or 5.0, indicating that multicollinearity is not a problem in this model. The predictor constructs exhibit sufficient uniqueness to ensure stable estimates in subsequent analyses, thereby facilitating the identification of reliable structural relationships. Therefore, the results presented in Tables 6–10 provide definitive confirmation of the measurement model's acceptable reliability and validity. These results establish a solid investigative foundation, enabling the formulation of models supported by substantial empirical evidence, thereby ensuring their credibility and validity.

Table 10. Collinearity assessment using VIF.

List	VIF
CG > RG	1.4930
CG > RSRP	1.7940
IL > RG	1.3440
IL > RSRP	1.4740
MA > RG	1.2700
MA > RSRP	1.3400
NT > RG	1.5810
NT > RSRP	1.7060
RG > RSRP	2.3450

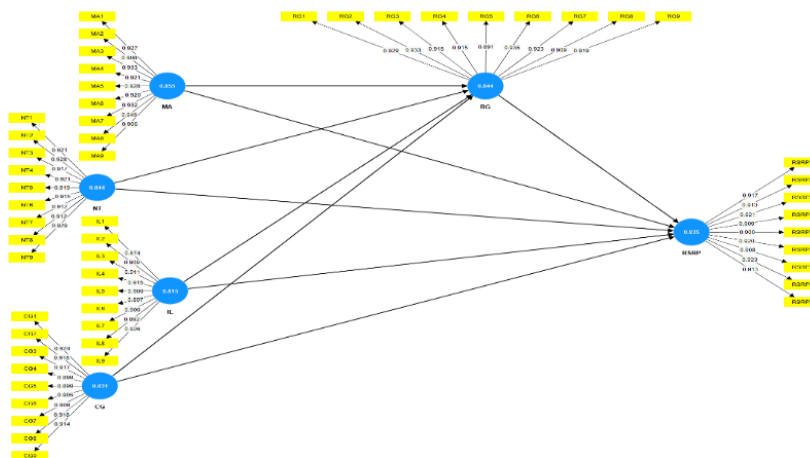


FIGURE 4. Reflective measurement model.

4. STRUCTURAL MODEL ASSESSMENT

The direct effects of the structural model are presented in Table 11. The results suggest that all governance antecedents (CG, IL, MA, and NT) have a positive and significant relationship with RG ($p < 0.01$). In contrast, the direct effects on Reflective Sustainability Reporting Practices (RSRP) are weak and statistically insignificant. It appears that RG (or reflective governance) and RSRP are the only factors with a strong, direct, and statistically significant relationship ($\beta = 0.641$, $p < 0.001$). This suggests that RG is central to explaining variance in reporting practices. This finding indicates that governance conditions have a significant impact on reporting outcomes through reflective processes rather than direct causal dominance.

Table 11. Path coefficients and significance levels (Direct Effects).

Path coefficients	(O)	(M)	(STDEV)	(O/STDEV)	P values
CG > RG	0.3580	0.3550	0.0570	6.2470	0.0000
CG > RSRP	0.0230	0.0210	0.0800	0.2840	0.7760
IL > RG	0.2350	0.2380	0.0560	4.1780	0.0000
IL > RSRP	-0.0280	-0.0270	0.0630	0.4470	0.6550
MA > RG	0.1730	0.1740	0.0510	3.4120	0.0010
MA > RSRP	0.0750	0.0760	0.0680	1.1030	0.2700
NT > RG	0.2310	0.2300	0.0610	3.8140	0.0000
NT > RSRP	0.0240	0.0250	0.0760	0.3110	0.7560
RG > RSRP	0.6410	0.6410	0.0730	8.7540	0.0000

Please refer to Table 12, which reports the model's explanatory power. The R^2 value for RG is 0.574, whereas RSRP only reaches an R^2 of 0.482. In the context of governance research, this can be considered moderate explanatory power. The adjusted R^2 values (0.564 and 0.467, respectively) are consistent, indicating stable models with minimal estimation bias. The proposed model explains a significant share of the variance in reflective governance and sustainability reporting practices. However, it also acknowledges the partial influence of additional contextual factors.

Table 12. Coefficient of determination (R^2 and Adjusted R^2).

Constructs	R-square	R-square adjusted
RG	0.5740	0.5640
RSRP	0.4820	0.4670

Estimates of the effect size (see Table 13) provide further insight into each predictor's relative contribution. The potency of collaborative governance with respect to RG was moderate ($f^2 = 0.202$); the potency of institutional legitimacy, negotiated transparency, and moral accountability was little to medium (0.096, 0.079, and 0.055, respectively). The strongest effect in the design was RG > RSRP ($f^2 = 0.338$), indicating that reflective governance significantly influences reporting practices. In parallel, the direct effects of all governance antecedents on RSRP were too small to lend support to the interpretation of indirect pathways over and above direct relations (where they are possible).

Table 13. Effect Size (f^2) for structural relationships.

List	f-square
CG > RG	0.2020
CG > RSRP	0.0010
IL > RG	0.0960
IL > RSRP	0.0010

List	f-square
MA > RG	0.0550
MA > RSRP	0.0080
NT > RG	0.0790
NT > RSRP	0.0010
RG > RSRP	0.3380

Q² values were computed using the blindfolding procedure, as shown in Table 14. High predictive relevance is indicated by Q² (0.476) based on R²G. A moderate power to estimate R² values is indicated by RSRP (0.3970). Out-of-sample predictive relevance is indicated by the positive Q² values from the two distinct modeling approaches, providing evidence of the model's potential to explain dynamics not captured by governance data. However, these results should be interpreted as evidence of predictive capacity rather than definitive evidence of generalizability.

Table 14. Predictive relevance (Q²) assessment.

Construct	SSO	SSE	Q ² (=1-SSE/SSO)	Interpretation
RG	1620	849.3130	0.4760	Large predictive relevance
RSRP	1620	977.6250	0.3970	Moderate predictive relevance

The results of the bootstrapping-based structural model of the relationships among the constructs are shown in Figure 5. From Collaborative Governance, Institutional Legitimacy, Moral Accountability, and Negotiated Transparency to Reflective Governance (RG), these pathways appear significant and consistent, suggesting that various governance conditions help shape an organization's reflective capacity. On the other hand, the direct relationships between these four constructs and Reflective Sustainability Reporting Practices (RSRP) appear weak and insignificant. The discussion highlighting the very strong and significant relationship between RG and RSRP reinforces RG's role as the primary mediating mechanism. The overall mediating effect of sustainability reporting supports a full mediation model, in which the quality of sustainability reporting is not determined directly by governance factors but rather through internal reflective processes within the organization.

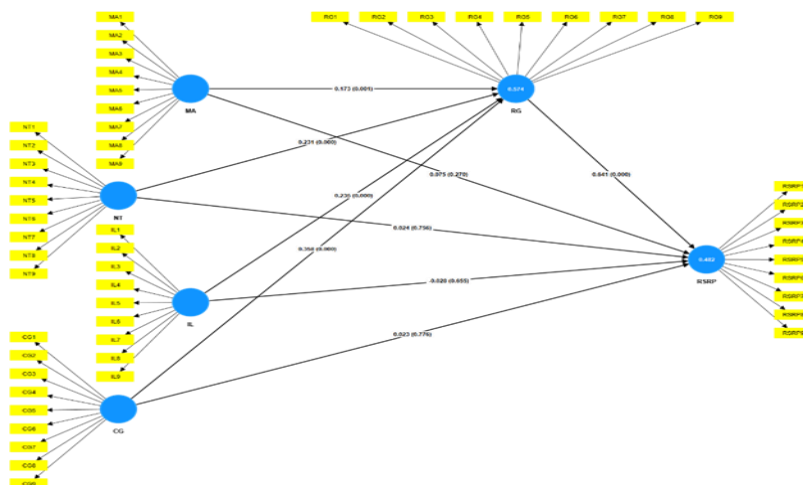


FIGURE 5. Structural model (Inner Model) with bootstrapping results.

5. MEDIATION ANALYSIS

Table 15 provides details of the specific indirect effects (i.e., the impact of governance antecedents on RSRP through RG). All indirect paths are positive and statistically significant, confirming that RG consistently mediates across the relationships. The highest indirect effect is found for $\beta = 0.2300$, $p < 0.001$ (collaborative governance), followed by $\beta = 0.1500$, $p < 0.001$ (institutional legitimacy), and $\beta = 0.1480$, $p = 0.001$ (negotiated transparency). Moral accountability also has a significant, albeit much smaller, indirect effect ($\beta = 0.1110$, $p = 0.0010$). These results suggest that indirect effects through reflective governance, rather than direct effects, govern the relationship between governance antecedents and sustainability reporting practices.

Table 15. Specific indirect effects via reflective governance.

Indirect effects	(O)	(M)	(STDEV)	(O/STDEV)	P values
CG > RG > RSRP	0.2300	0.2280	0.0480	4.7890	0.0000
IL > RG > RSRP	0.1500	0.1520	0.0390	3.8430	0.0000
MA > RG > RSRP	0.1110	0.1110	0.0340	3.2600	0.0010
NT > RG > RSRP	0.1480	0.1480	0.0430	3.4380	0.0010

Source; author 2026.

Table 16 reports the combined direct and indirect relationships. The total effects were statistically significant for collaborative governance ($\beta = 0.2520$, $p = 0.0010$), moral accountability ($\beta = 0.1860$, $p = 0.0140$), and negotiated transparency ($\beta = 0.1720$, $p = 0.0350$). However, the effect on institutional legitimacy was not significant at conventional levels ($\beta = 0.1220075$, $p < 0.0690562$). Reflective governance remains the most significant predictor of RSRP ($\beta = 0.6410$, $p < 0.001$), confirming its pivotal role in the model. Nevertheless, these results should be viewed as indicative of relational patterns rather than conclusive evidence of causal effects.

Table 16. Total effects on reflective sustainability reporting practices.

Path	Total Effect	T Statistics	p Values
CG > RSRP	0.2520	3.2510	0.0010
IL > RSRP	0.1220	1.8160	0.0690
MA > RSRP	0.1860	2.4570	0.0140
NT > RSRP	0.1720	2.1040	0.0350
RG > RSRP	0.6410	8.7540	0.0000

Source; author 2026.

The VAF values (Table 17) further code the type of mediation. Results showed that Moral Outsourcing is partially mediated (VAF = 59.7000%), suggesting that at least a part of the effect directly relates to RSRP, whilst the other part follows an indirect pathway. In particular, full mediation is observed between RG and Negotiated Transparency (VAF = 86.0000%) and Collaborative Governance (VAF = 91.3000%), implying that their impact is predominantly conveyed through RG. The VAF for Institutional Legitimacy exceeds 100% and can be interpreted as a suppressor effect or an indirect-only effect, suggesting that its relationship with RSRP explains the entire role of reflective governance. These trends suggest a mediated model in which governance antecedents relate to reporting outcomes primarily through internal reflection processes. Overall, the mediation results are consistent with the interpretation that reflective governance serves as a major mechanism through which governance conditions shape sustainability reporting practices. However, given the cross-sectional nature of these data and our use of perceptual measures, these findings should be interpreted with caution and treated as evidence of mediated associations rather than causal relationships.

Table 17. Variance accounted for (VAF) and mediation.

Hypothesis	Indirect Effect	Total Effect	VAF (%)
H10 MA > RG > RSRP	0.1110	0.1860	59.70%
H11 NT > RG > RSRP	0.1480	0.1720	86.00%
H12 IL > RG > RSRP	0.1500	0.1220	>100%*
H13 CG > RG > RSRP	0.2300	0.2520	91.30%

Source; author 2026.

6. INTEGRATED INTERPRETATION OF QUALITATIVE AND QUANTITATIVE FINDINGS

The combined findings from the CGT and SEM methods are clearly consistent across all methods, as shown in Table 18. However, the governance antecedents' moral accountability, negotiated transparency, institutional legitimacy, and collaborative governance are not consistent. They do not have any significant direct effects on RSRP but reveal significant indirect relationships through RG. Reporting practices unfold in ways that are neither directly nor prescriptively governed; rather, they are the outcome of internal processes of interpretation and reflection. As with earlier CGT discoveries concerning EU-region sustainability reporting, those emerging from the global picture demonstrate that organizational responsibility is not merely a technical or compliance-driven activity resulting from regulation. Instead, it arises through normative accounts, local compromise, and social negotiations [96]. The results of the study lend support to this interpretation by showing that RG is the only factor that has a direct and significant relationship with RSRP ($\beta = 0.6410$, $p < 0.001$). This suggests that reflective governance can transform these interpretive processes into outcomes at the organizational level. This depiction of integration also embodies the notion of correlating qualitative discernment with quantitative evaluation through construct development and data transformation [78, 79, 86, 87].

This integrated interpretation makes a further contribution to the literature by showing that sustainability reporting in the public sector emerges as a socially constructed and processual governance practice. The effectiveness of governance antecedents, which provide structural and relational preconditions, depends on the organization's ability to exercise reflexivity, engage in dialogue, and learn. This result supports scholarship that uses a mix of methods, suggesting that adding qualitative depth to the statistical knowledge base improves explanatory power and theoretical coherence [21, 43, 79]. This study identifies reflective governance as the mechanism linking institutional pressures on boards of directors with the quality and level of reporting practices. This helps to clarify why similar governance conditions can foster both symbolic and substantive reporting practices. However, we should interpret these findings with caution as evidence of consistent cross-method patterns rather than substantiation of causal relationships.

Table 18. Integration matrix of constructivist grounded theory findings and SEM results.

Construct	Key Qualitative Insights (CGT)	SEM Direct Effect on RSRP	SEM Indirect Effect via RG	Total Effect on RSRP	Type of Mediation (VAF)	Integrated Interpretation
Moral Accountability (MA)	Reporting is framed as an ethical obligation (<i>amanah</i>), emphasizing public service values and moral responsibility, yet constrained by administrative routines	$\beta = 0.0750$ ($p = 0.2700$) – Not significant	$\beta = 0.1110$ ($p = 0.0010$) – Significant	$\beta = 0.1860$ ($p = 0.0140$) – Significant	Partial mediation (59.7000%)	Ethical commitment alone does not directly translate into substantive reporting; it requires reflective processes to be operationalized
Negotiated Transparency (NT)	Transparency is constructed through internal negotiation, balancing openness with risk, and shaped by	$\beta = 0.0240$ ($p = 0.7560$) – Not significant	$\beta = 0.1480$ ($p = 0.0010$) – Significant	$\beta = 0.1720$ ($p = 0.0350$) – Significant	Full mediation (86.0000%)	Transparency influences reporting only when mediated through reflective governance that

Construct	Key Qualitative Insights (CGT)	SEM Direct Effect on RSRP	SEM Indirect Effect via RG	Total Effect on RSRP	Type of Mediation (VAF)	Integrated Interpretation
	differing interpretations across organizational units					enables interpretation and alignment.
Institutional Legitimacy (IL)	Reporting is used to signal conformity, credibility, and alignment with institutional expectations, often leading to symbolic compliance	$\beta = -0.0280$ (p = 0.6550) – Not significant	$\beta = 0.1500$ (p = 0.0000) – Significant	$\beta = 0.1220$ (p = 0.0690) – Not significant	Full mediation (>100.0000%)	Legitimacy pressures tend to produce symbolic reporting unless internalized through reflective governance mechanisms.
Collaborative Governance (CG)	Reporting is produced through inter-agency coordination, shared data, and cross-sector collaboration, enabling collective meaning-making	$\beta = 0.0230$ (p = 0.7760) – Not significant	$\beta = 0.2300$ (p = 0.0000) – Significant	$\beta = 0.2520$ (p = 0.0010) – Significant	Full mediation (91.3000%)	Collaboration enhances reporting quality indirectly by fostering shared understanding and reflective engagement
Reflective Governance (RG)	Organizational learning, reflexive dialogue, and interpretive processes that integrate governance conditions into decision-making and reporting	$\beta = 0.6410$ (p = 0.0000) – Significant	$\beta = 0.6410$ (p = 0.0000) – Significant	$\beta = 0.6410$ (p = 0.0000) – Significant	Direct dominant effect	Acts as the central mechanism translating governance conditions into substantive sustainability reporting practices
Reflective Sustainability Reporting Practices (RSRP)	Reporting evolves from compliance-oriented and symbolic disclosure toward reflective, learning-based, and impact-oriented practices	$\beta = 0.6410$ (p = 0.0000) – Dependent relationship	$\beta = 0.6410$ (p = 0.0000) – Outcome pathway	$\beta = 0.6410$ (p = 0.0000) – Outcome	Outcome variable	Represents the final outcome shaped by integrated ethical, institutional, and relational governance processes

7. DISCUSSION

This suggests that sustainability reporting in the public sector is not just a technical disclosure exercise but rather a socially constructed framework of governance practice influenced by institutional pressures, ethical reasoning, and relational dynamics. In line with interpretive accounting research, reporting does not simply involve adhering to formal standards; rather, it emerges through sensemaking, negotiation, and selective visibility [2, 15, 26, 28]. Qualitative results reveal that public officials meaningfully construct reporting using moral responsibility, negotiated transparency, concerns about legitimacy, and joint interaction. However, the quantitative results suggest that these governance factors do not significantly predict reflective sustainability reporting practices. Rather, they are acted on via reflective governance. This pattern indicates that governance conditions alone are insufficient to produce writing outcomes unless reflexive and dialogic organizational processes internalize them [13, 97, 98].

This study proposes reflective governance as an intervening mechanism that connects governance conditions with reporting practices, thereby contributing to a theoretical understanding of the context. Although institutional theory has traditionally accounted for reporting via isomorphism and legitimacy-seeking activities [12]. It only weakly addresses how such pressures are interpreted within organizations. Building on this perspective, the current findings argue that, in real-world terms, legitimacy, accountability,

transparency, and collaboration only acquire meaning after being intermediated by processes of learning, exchange, and critical deliberation. In this sense, reflective governance does not replace institutional theory; it supplements it by providing a processual and interpretive perspective. This contribution enhances our understanding of why similar governance conditions yield different reporting outcomes among public organizations, ranging from mere symbolic compliance to more substantial, learning-oriented reporting [1, 2, 56].

The study's findings also make an important scholarly contribution to the fields of dialogic accounting and organizational learning by conceptualizing sustainability reporting as a reflexive space rather than a one-way disclosure mechanism. Reflective governance appears to encompass reconceptualizing data, challenging trusted premises, learning from experience, and integrating this learning into planning and accountability systems. This aligns with both dialogic accountability and double-loop learning perspectives. [15, 26, 29]. Importantly, the absence of statistically significant direct effects from governance antecedents to reporting should not be interpreted as indicating that these conditions are irrelevant. Rather, they suggest that their influence is contingent and mediated, which makes a theoretical contribution to the field of sustainability reporting, which is often criticized for being ceremonial, symbolic, or compliance-focused [19, 51, 99–101]. Thus, the findings highlight the distinction between having governance structures and using them reflectively.

At the methodological level, this study makes an analytical contribution by demonstrating how the sequential integration of CGT and PLS-SEM in a mixed-methods design can yield deeper insights. The CGT phase allows for the identification of context-rooted constructions and the procedural meanings that emerge from actors' interpretations. In contrast, SEM provides a deductively driven evaluation of the relationships among these constructions to develop predictive models. Such integration enhances interpretive richness and quantitative precision, aligning with recent calls for qualitative complexity and quantitative confirmation to overlap in public sector and sustainability research [3, 82, 86, 87]. Grouping emerging qualitative categories into scalable latent constructs (Table 5) allows this study to clearly demonstrate how data are transformed, thereby yielding an explicit methodology that enhances methodological coherence across all research phases. Furthermore, empirically reframing reflective governance as a mediating construct expands the insights generated by CGT regarding testable relational patterns, coherently extending recent CGT-based sustainability research that emphasizes the need for processual and dynamic theory-building [62, 76]. Although the mediation test results provide strong evidence for indirect relationships, these results should be interpreted as suggestive structural associations, not as conclusive causal relationships [81–83], a best practice in PLS-SEM research and cross-sectional governance studies.

This is primarily because the study's findings are relevant to governance at the local, regional, and global levels. Our findings in the Indonesian context, particularly within a decentralized provincial system like East Java, indicate that sustainability reporting should not be viewed merely as formal compliance with frameworks (for example, alignment with the SDGs and application of the GRI) that align with digital transparency initiatives. Rather, effectiveness depends on strengthening internal capacity for dialogue, reflexivity, and inter-organizational learning, thereby enabling governance conditions to be meaningfully operationalized in reporting [67, 68, 102]. At the aggregate Asian level, where governance systems can be characterized as hierarchical and increasingly inadequate in addressing the dynamics of sustainability pressures, these findings point to interpretive capacity as a bridge between formal compliance and substantive accountability [7, 103–105]. At the global scale, this study offers new insights into the ongoing discussion regarding public sector sustainability reporting, also demonstrating that the effectiveness of reporting does not depend solely on the adoption of standards, but rather on how these standards are internalized, negotiated, and implemented within institutional contexts [9, 62, 111, 117]. This reinforces recent critiques of sustainability governance that highlight the tension between symbolic compliance and transformative accountability [5, 7].

Finally, this study identifies several areas for further research. Its contextual transferability and role in shaping sustainability reporting practices require examination through comparative studies across regions,

countries, and governance systems. Further longitudinal research could investigate how reflective governance evolves in response to institutional reforms, political changes, or digital transformation initiatives. Additionally, emerging technological developments, including digital reporting platforms, AI-based analytics, and open data ecosystems, may support or constrain reflective processes within public organizations [9, 98], a topic that should be explored in future research. The issues of power, institutional resistance, and political dynamics that shape the understanding and implementation of governance conditions in practice also warrant further attention [13, 38]. Therefore, reflective governance should be considered not only as an explanatory tool, but also as a generative analytical lens through which to examine sustainability reporting as an ongoing form of governance that persists within and across contexts of institutional complexity and uncertainty [1, 31, 55, 57].

V. CONCLUSION

This study explores how governance conditions influence sustainability reporting practices in the public sector and proposes reflective governance as a potential mediating mechanism. Using a mixed-methods approach based on a sequential exploratory research design, the results suggest that governance factors such as moral accountability, negotiated transparency, institutional legitimacy, and collaborative governance may not directly determine sustainability reporting. Instead, these elements are indirectly mediated through reflective governance, which encompasses organizational dialogue regarding learning and the creation of interpretive meaning. These findings suggest that effectively implementing governance structures to ensure sustainability reporting depends as much on the organization's internal understanding and application of these structures as on their existence.

This study contributes to the literature in several ways. Firstly, it contributes to theory by proposing reflective governance as a procedural mechanism that links micro-level institutional pressures to reporting outcomes. This expands institutional and accountability theory towards a more interpretive and dynamic perspective [10, 12, 15]. Secondly, the article demonstrates how foundational constructivist theory and PLS-SEM can be systematically combined to provide a coherent pathway for integrating qualitative variable interpretation with quantitative hypothesis testing in governance research [82, 86]. Thirdly, the article makes an empirical contribution by examining the context of a decentralized public sector and demonstrating that reporting outcomes vary depending on the availability of reflective capacity, despite similar governance conditions.

From a practical perspective, reinforcing these findings indicates that sustainability reporting will benefit more from motivational approaches than from compliance-oriented strengths within public sector organizations when it comes to increasing environmental consciousness. This involves promoting inter-agency dialogue, integrating learning processes into reporting cycles, and encouraging reflexivity in both data collection and performance results. This is particularly relevant in decentralized governance contexts, where the challenges of coordination and institutional complexity call for adaptive, context-sensitive reporting practices. More generally, the study advances global conversations on SDG implementation and public accountability by acknowledging that effective sustainability reporting necessitates the meaningful internalization of frameworks, not just their adoption.

While this study contributes to the existing literature, it also identifies areas for future research. Causal inference is limited by the cross-sectional nature of the quantitative data, and the findings are specific to a provincial government setting. Longitudinal and comparative designs should be employed to examine how reflective governance evolves in various institutional settings. Other studies may investigate the contribution of new digital technologies and data infrastructures. These may lead to more reflective governance processes. Other studies may look at how political dynamics and organizational culture can promote (or inhibit) sustainability reporting. Together, these studies establish reflective governance as an important theoretical framework for analyzing sustainability reporting in the public sector, providing a more detailed understanding of how governance arrangements are translated into meaningful, contextualized reporting.

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Author Contributions

Yunaita Rahmawati: Conceptualization, Methodology, Investigation, Data Curation, Formal Analysis, Writing – Original Draft. Prof. Eko Ganis Sukoharsono: Supervision, Conceptualization, Writing – Review & Editing, Validation. Prof. Lilik Purwanti: Methodology, Validation, Writing – Review & Editing. Prof. Zaki Baridwan: Supervision, Theoretical Framework Development, Writing – Review & Editing. Prof. Wuryan Andayani: Formal Analysis, Visualization, Writing – Review & Editing.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

Data Availability Statement

The data supporting the findings of this study are not publicly available due to confidentiality and institutional restrictions, as they involve sensitive information from public sector organizations. However, anonymized data may be made available from the corresponding author upon reasonable request and with permission from the relevant authorities.

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Ethical Approval

This study involves human participants, namely, public officials. All procedures performed in this study were conducted in accordance with ethical standards for research involving human subjects. Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents were assured of confidentiality and anonymity. No personal or sensitive identifying information is disclosed in this study.

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Appendix Data

Appendix A1. Demographic profile of survey respondents.

Characteristic	Category	Frequency (n)	Percentage (%)
Age	28–35 years	26	14.4
	36–45 years	72	40.0
	46–55 years	61	33.9
	56–60 years	21	11.7
Education Level	Diploma (D3)	18	10.0
	Bachelor’s Degree (S1)	108	60.0
	Master’s Degree (S2)	50	27.8
	Doctoral Degree (S3)	4	2.2
Position Level	Echelon IV	54	30.0
	Echelon III	45	25.0
	Functional Officer	63	35.0
	Staff / Analyst	18	10.0
Years in Organization	1–5 years	21	11.7
	6–10 years	39	21.7
	11–15 years	46	25.6
	16–20 years	38	21.1
	>20 years	36	20.0
Tenure in Current Role	1–3 years	71	39.4
	4–6 years	56	31.1
	7–10 years	39	21.7
	>10 years	14	7.8

Characteristic	Category	Frequency (n)	Percentage (%)
Type of Government Unit (OPD)	Core Governance Units (BPKAD, BAPPEDA, Inspectorate, Diskominfo, SDG Secretariat)	72	40.0
	Sectoral Units (Environment, Social, Education, Health, Agriculture, Industry)	108	60.0
Training on Sustainability Reporting	Yes	117	65.0
	No	63	35.0

Appendix A2. Semi-structured interview protocol.

Theme	Code	Interview Question	Analytical Purpose	Source
Moral Accountability	MA-INT1	How do you interpret the meaning of sustainability reporting within your organization?	To explore individual moral interpretation and value orientation in reporting practices	[17, 69, 70]
	MA-INT2	Do you perceive sustainability reporting as an ethical responsibility to the public? Why?	To examine perceived moral obligation and public service ethos	[17, 19]
	MA-INT3	Have you experienced discomfort when reporting becomes purely administrative?	To identify ethical tensions and internal conflicts	[52]
Negotiated Transparency	NT-INT1	How do departments negotiate what information is disclosed in sustainability reports?	To capture internal negotiation and decision-making processes	[109]
	NT-INT2	Do different units interpret “transparency” differently? Can you provide examples?	To explore the interpretive variation of transparency	[48, 122]
	NT-INT3	What risks are considered before disclosing certain information?	To analyze openness–risk trade-offs	
Institutional Legitimacy	IL-INT1	To what extent does sustainability reporting enhance institutional legitimacy?	To assess the symbolic and reputational functions of reporting	[12]
	IL-INT2	Do external pressures influence sustainability reporting practices?	To capture institutional isomorphism and regulatory influence	[10, 43]
	IL-INT3	Is sustainability reporting perceived as a routine or ceremonial activity?	To examine ritualistic and institutionalized behaviors	[49, 50, 122]
Collaborative Governance	CG-INT1	How do agencies coordinate during the reporting process?	To identify coordination mechanisms across institutions	[18, 26]
	CG-INT2	What challenges arise in integrating data from multiple agencies?	To explore barriers in inter-organizational collaboration	[42, 124, 125]
	CG-INT3	How do different sectors contribute to sustainability reporting?	To assess cross-sector integration	[19, 122]

Reflective Governance (Mediator)	RG-INT1	How does the reporting process facilitate reflection and learning?	To capture organizational learning and reflexivity	[16, 34]
	RG-INT2	Are there opportunities for critical evaluation during reporting discussions?	To examine reflective dialogue and critical engagement	[65]
	RG-INT3	How is reporting integrated into policy development and improvement?	To analyze systemic governance integration	[52]
Reflective Sustainability Reporting Practices	RSRP-INT1	How do reports disclose both achievements and limitations?	To assess reflexivity and reporting completeness	[57, 62, 126]
	RSRP-INT2	How are outcome impacts incorporated into reporting?	To evaluate substantive, impact-oriented reporting	[115]
	RSRP-INT3	How is digital transparency (e.g., open data platforms) utilized?	To examine digital governance and disclosure practices	[48, 55, 122]
Cross-Cutting Themes	VAL-INT1	How do cultural values (e.g., integrity, public service) influence reporting practices?	To link the cultural context with the reporting construction	[52]
	PROC-INT1	Can you describe a situation where reporting influenced decision-making?	To capture transformative learning and organizational change	[51]

Appendix A3. Variable operationalization and measurement model (Refined Structure).

Construct	Item Code	Dimension	Item	Scale	Source
Moral Accountability	MA1–MA9	Moral Responsibility; Public Service Orientation; Ethical Reflection	(items as provided, refined wording retained)	Likert (1–5)	[17, 55, 130]
Negotiated Transparency	NT1–NT9	Inter-unit Negotiation; Openness–Risk Balance; Meaning of Transparency	(items retained)	Likert (1–5)	[48, 121–123]
Institutional Legitimacy	IL1–IL9	Symbolic Legitimacy; Institutional Isomorphism; Ritual & Learning	(items retained)	Likert (1–5)	[12, 54, 78]
Collaborative Governance	CG1–CG9	Coordination; Data Collaboration; Cross-Sector Integration	(items retained)	Likert (1–5)	[18, 19, 42]
Reflective Governance	RG1–RG9	Organizational Learning; Reflective Dialogue; Systemic Integration	(items retained)	Likert (1–5)	[9, 16, 55]
Reflective Sustainability Reporting Practices	RSRP1–RSRP9	Report Substance; Reflective Process; Systemic Integration	(items retained)	Likert (1–5)	[59, 126–128, 131]