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ESG Transparency Dashboards for Mining and Processing: Designing Plain-Language Metrics that Increase Community Trust and Grievance-Resolution Rates

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Abstract

The mining and mineral processing processes create intricate environmental, safety, and social information which in many circumstances remains unreachable to the communities and stakeholders. ESG dashboards (environmental, social, governance) in plain language are an exciting instrument that can help ensure change of technical indicators into actionable and understandable information that may enhance community confidence and speed of grievance redress. In the paper, an ESG transparency dashboard adapted to the situation in the field of mining and processing develops a centrally open schema of measures, applies the principles of visualization and interaction based on literature on human-centered design and risk communication, creates an empirical assessment plan based on iterative UX testing and interrupted time-series analysis, and evaluates the means of control and verification underlying the maintenance of the long-term trust. We replicate the finding that clarity, context, and disclosure cadence in addition to dependable grievance processes can positively enhance times of recognition and resolution of community issues. The paper ends with some practical recommendations on how operators, regulators, and community oversight organizations can pursue the use of standardized, plain-language ESG dashboards without violating local requirements of information.

Keywords: Dashboards; Community; Grievance; ESG

1. Introduction

Mining and mineral processing continue to play a central role in the global supply chains particularly as the societies hasten the energy transition that relies on critical minerals. But the social permission to work is weak: communities residing near locations tend to be left out of meaningful and opportune knowledge on environmental and safety performance, and grievance systems are ineffective or slow (Owen, 2024; World Bank, 2022). The proposed ESG transparency dashboard addresses this gap in governance and communication through converting the technically robust information into plain-language stories, user-friendly charts, and task-focused overviews that may be understandable by the community members, workers, regulators, and civil society (Mupa, 2024).

The evidence and theory presented in the paper integrate risk communication, human-centered design, grievance-mechanism literature, and digital ESG reporting of the study to generate a research and implementation agenda on the basis of dashboards that are specific to the mining site. It places the dashboard as a tool of communication and a governance tool, and has the potential to reduce the response time to grievance and resolution time- critical indicators of operational legitimacy and conflict reduction (Harrison, 2023; World Bank, 2022).

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2. Problem statement: the issue of communication gap in ESG disclosures mining

2.1. Technical perfection vs. popular understanding

Modern ESG reporting, be it in the sustainability reports of a company or permit filings, can sometimes be technically detailed; it is just impractically inaccessible to non-technical readers. Tables of chemical concentrations and technical safety indices or complying documents of a statutory nature, fail to provide the real world, day-to-day questions that the community member wonders about: Is my water safe today? or are they lake dust on the site, do not they do our children? (Mupa, 2024). The lack of communicative congruence is the source of rumor, distrust, and antagonistic patterns of grievance (Massa, 2024).

2.2. Grievance backlog and the trust deficit

The weak aspects of operational grievance mechanisms in extractive settings often include: delays in recognition, intransparency in the handling of such grievances and an ambiguous route of resolution. The evaluations prepared by World Banks and multi-stakeholder reviews prove that the presence of accessible and timely feedback loops are associated with improved service results and increased citizen satisfaction; in contrast, a lack of clarity in the evaluation mechanisms leads to the growth of disputes (World Bank, 2022; Harrison, 2023). Information asymmetries can be mitigated by an openness dashboard that discloses the performance levels, as well as the current grievance status of the action, which in turn makes the procedure predictable, which is a primary contributor to perceived fairness and trust (Owen, 2024).

2.3. The online opportunity and risks associated

The use of digital dashboards allows the frequent, and even closer to the real-time, publication of the measured indicators, yet new governance requirements also arise (provenance of data, third-party verification, design that can be easily read). Unless well-constructed, dashboards may give an illusion of transparency but fail to solve the root causes of speed or quality of grievance processing, even what other scholars call transparency theater (Owen, 2024). As a result, valid dashboards necessarily need institutional pledges and models of a user-oriented interface to information-recovery processes (Munch, 2025).

3. The Dashboard Idea: Objectives, Consumers, and Fundamental Indicators

Environmental, Social, and Governance (ESG) transparency dashboards have recently become a more relevant tool of communicating complicated environmental and safety information in a manner that would be substantially perceived by non-technical audiences. In the contexts of mining and processing, the ESG dashboards and their functions as communication tools and accountability measures can be seen in accordance with the global trends of environmental disclosure to the general population and community right-to-know programs (OECD, 2024). In this chapter, the conceptual principles of an ESG transparency dashboard are articulated, detailing the main purpose of the tool, key consumer groups, and a standardized and open metrics schema that would be: user friendly, comparable, and institutionalized.

3.1. ESG Transparency Dashboard Goals

The creation of an effective ESG dashboard should achieve three general objectives, including understanding, responsibility, and involvement.

Firstly, there is comprehension entailing the translation of complicated scientific information, including water-quality parameters, dust concentrations, tailings monitoring signs, or employee injury rates, into simple language that can be understood by community individuals without expert education. It is continuously demonstrated that clarity, frames of context, and simplification of visual messages are effective elements in enhancing stakeholders and make them correctly interpret environmental risk information (Massa et al., 2024).

Secondly, accountability is defined as the role of the dashboard to bring operational performance and grievance handling to view. High-quality grievance mechanism mining activities would tend to have better acknowledgment times and a lower escalation, although the effects would be magnified in the presence of performance tracked publicly (World Bank, 2022). The dashboard makes procedural justice which is a required element of trust, operational by providing clear signs like types of complaints, average response time, or remedial response (Harrison, 2023).

Thirdly, participation entails the reduction of obstacles to participate in decision making processes. Communities or societies which have easy access to and conception of acquired information will tend to attend consultations more, seek clarification, as well as monitoring follow-up activities. According to the International Council on Mining and Metals (ICMM, 2021), two-way communication is responsive, which enhances the social performance in the long run. A dashboard is hence not just a tool of reporting but more a governance interface that will enable communities, workers, regulators, and oversight groups.

3.2. Frequentness, User Cohorts and Information Needs

Mining activities visibly overlap with different sets of stakeholders whose information requirements differ, greatly. The multi-layered and user-centered design should be applied in a dashboard so that these variable expectations could be met.

The local residents usually are concerned with basic, health-related signs, such as water safety, the amount of blast vibration, dust surpass, or noise grievance. The environmental health literacy research indicates that the residents are more inclined to short explanatory messages than numeric values (Massa et al., 2024).

Ordinary framing, multilingual options, and capacity to map ecological signifiers on traditional ecological understandings may be appropriate measures in Indigenous and Tribal societies. OECD (2024) found out and clearly states that modernization tools in mining should not infringe the Indigenous data sovereignty and local governance procedures.

The workers require fast operationally significant metrics like counts of near-misses, trends of TRIR, or/and safety audit alerts. As it is illustrated by Dougherty et al. (2025), dashboards that are built with brief visual displays can enhance the performance and understanding of tasks by frontline employees.

Dependence on trend analyses, raw data, audit logs and documented corrective measures often demand more technicality by regulators and non-governmental activists. These users enjoy the advantage of having layered interfaces to enable them to drill down to methods, threshold values, and verification histories.

ESG performance has gained popularity as investors and other players in the supply chains assess the procurement decisions of companies engaging in critical minerals and prospective suppliers.

3.3. Metric Schema a Modular, Free Framework

The architecture of a strong ESG dashboard must be based on an open, modular scheme of metrics that standardizes the indicators descriptions of all operations and at the same time be adaptable to support local information demands. The core modules include:

- Air Quality Measures: PM2.5, PM10, dust deposition activities and surpassing the national or the WHO standards. Research indicates that air quality dashboards coded in easily readable color are much better interpreted by the people (Clevertap, 2018).
- Water Quality Indicators: PH, turbidity, heavy metals, microbial indicators and available against health based standards. Water monitoring transparency has been demonstrated to minimise conflict in the high-risk extractive regions (OECD, 2024).
- Tailings Integrity Indicators: The results of the engineer inspection, piezometer results, and seepage tendencies and safety warning signs. Effective communication on the topic of tailings stability has become a necessity after international failure and the emergence of international safety standards (ICMM, 2021).
- Worker Safety Metrics: TRIR, LTIFR, close calls, corrective actions completed. The indicators of worker safety have become the dominant focus of ESG investors who examine these indicators as primary leading signals of the quality of operations (Fikru, 2024).
- Grievance Mechanism Measures: Count of complaints, type, response time, decision time, and repeat. Demonstrated to reduce response times and bring out increased trust in place of a well-defined service-level commitment, the implementation of a public grievance dashboard has been shown to reduce response time (World Bank, 2022).

All measures need to be put in perspective with stories with the dashboard with the undertones of status icons, sparkline charts, and threshold indicators in order to decipher it correctly.

4. Design Labelling: Plain Language, Visualization, and UX Techniques

The most effective ESG transparency dashboards have been found to be based upon design principles granting the accessibility, interpretability and actionability of complicated environmental and safety data by various user groups. Due to the predisposition of information asymmetries in mining and processing settings and the frequent premise that public mistrust is not based on the absence of information but instead on communication breakdown, plain language, visual representation and human-focused design become crucial considerations to be heeded (Massa et al., 2024). This chapter expounds on the major design principles that entail an effective ESG dashboard with insights that focus more on how approaches can be developed to enhance understanding, build trust and facilitate meaningful interaction.

4.1. Plain-Language Communication

An accessible ESG dashboard is normally based on plain-language translation. The raw environmental and safety information that is not interpreted can confuse non-technical users, and it may result in risk misunderstanding (Massa et al., 2024). The mining reports tend to be full of technical jargon like geotechnical factor-of-safety ratios, micrograms-per-liter contaminant limits or the TRIR numbers, which is not easily understood by some specialists. In plain language, these metrics are re-packaged in common words, short sentences and straight forward explanation of relevancy. Most studies on risk communication tend to reveal that clarity, appeal to emotion, and contextual storytelling have been strong contributors to achieving understanding, especially in relation to community-based environmental health literacy (Massa et al., 2024).

Plain-language words also contribute towards getting procedural fairness which is a fundamental determinant of trust. In line with Harrison (2023), who argues within the framework of grievance mechanisms, stakeholders do not just determine fairness based on the results but also on whether the sharing of information is conducted in an open and respectable manner. Beautiful dashboard hence encodes interpretative phrases like "The water test on today passed the health-check--nothing to do" or "There were two days when dust levels were more than the norm and the control is in progress. These are brief, practical interpretations that assist in eliminating ambiguity as well as decrease the possibilities of rumor or speculation.

4.2. Visualization Principles

The visual design is important in assisting users to extract the meaning of complex ESG measurements on their first sight. The best dashboards use good visual aids including color-coded indicators, simple graphs, icons, and other visualization feature which do not need numerical interpretation to communicate the status. According to Clevertap (2018), the key principles of the dashboard design are simplicity, consistency, and cognitive load reduction. For instance:

- Using color coded gauges one can easily tell predefined, warning, and action conditions.
- Time-series sparklines present graphs of the trends over weeks or months without having to clutter the users with verbose axis labels.
- There is iconography for example a drop of water symbolizes the water quality, a hard hat symbolizes safety which presents instant semantic information that may be used in multilingual contexts.
- Valid signals are useful to explain that reported value whether it is good, poor or improving.

These visualization practices are consistent with other findings reported by Dougherty et al. (2025), whose dashboard usability investigation established that high-contrast visuals, especially the simple ones, have a dramatic effect on the accuracy of tasks among frontline workers. Their study also highlights why visual predictability is important enough: consistent dashboards layouts mean that the users do not need to spend as much time interpreting new data, and cue up to a superior situational awareness.

4.3. Growing Disclosure and Multi-Layered Information

The different groups of users who access ESG dashboards such as residents, Indigenous people, workers, regulators, non-governmental organisations, and investors need varying degrees of information. The designs used to support the experts include progressive disclosure, a design approach whereby pile up complex information in the background with simplified tips on the surface, and yet dashboards remain user friendly in terms of simplicity. Massa et al. (2024) contend that the communication structures that are layered ease the cognitive load and improve retention in the general audiences.

The ESG dashboard could thus contain a summary first page with daily air and water condition, a layer with more detailed information with downloadable datasets, regulatory records or inspection reports etc. OECD (2024) emphasises that multilayered design is especially significant to the modernisation tools of the mining industry in Indigenous settings where there are various classes of communities that might need different types of evidence of the environment. Progressive disclosure is both more inclusive and technically rigorous, as well as readable.

4.4. Participatory Testing and Human-Centered UX Design

The human-centered design (HCD) is necessary in order to make dashboards visualize actual stakeholder needs instead of assumptions. Dougherty et al. (2025) prove that participatory UX testing wherein the target users test prototypes via task-based conditions can give practical feedback on what users do not understand and inconsistencies in design. The dashboard functionality indicators given as metrics like the time to complete a task, the error rates and the confidence of the user are valid indicators of whether they aid in understanding and making decisions.

Procedural justice can also be applied by using participatory UX practices in the mining governance sector to provide a community with technical power on information presentation. According to Harrison (2023), co-constructed communication mechanisms are also defensively purported to increase legitimacy through showing the respect of connections between the stakeholder and agency. By getting community members to give feedback about dashboard prototypes they contribute to the shaping of not only the interface but also the governance norms underlying the communication of information related to the environment.

4.5. Mobile-First and Accessibility Concerns

Since most of the communities affected by mining are major users of mobile gadgets, as the primary source of access to the internet, dashboards should be mobile-first made. The capacity to utilize responsive layout, low-data visualizations, and text that can be visibly read on small screens withhold expansion access by a large margin (OECD, 2024). Similar attributes need to be color-blind-safe palettes, icon alt text, and multilingual features which are also in line with environmental communication best-practice suggestions on accessibility (Massa et al., 2024).

5. Governance, Data Integrity and Verification

Strong governance frameworks are needed in order to ensure that ESG transparency dashboards will serve their intended goal as a way of increasing trust, accountability, and close information asymmetries between the mining operators and the communities affected by their operations. Unless that dashboard displays environmental or safety information, backed by the credible governance systems, it will likely become superficial, worse still, a device of transparency theater, where an image of transparency covers the lack of sufficient oversight (Harrison, 2023). To ensure that dashboards are valid rules of governance, proper policies regarding data integrity, verification, update frequencies, and community management opt to be included. This chapter defines the fundamental principles of governance necessary when applying significant transparency in the context of mining and processing.

5.1. Data Integrity/Provenance

Credible ESG dashboard is built on the data integrity. Even the most beautifully designed dashboard will not be able to build trust and promote informed decisions without the availability of reliable data entries. According to OECD (2024), contemporary mining governance systems should also have clear chains of custody of environmental and safety data either in sensors or laboratory tests or by physical inspection of the sites. Provenance records mean that provenance of data collection can be certainly traced in terms of the originate of data, time, and methodology applied.

As an example, the air quality parameters like PM10 or dust deposition events must have metadata referring to sensor calibration dates, maintenance history logs and the time stamp. Likewise, the water-quality information should record the site of sampling, laboratory accreditation as well as the method of analysis. These layers of documentation are not some add-on technical components, but they are required elements of procedural legitimacy. Transparency mechanisms work when a certain set of laws are adequately transparent and believable and controlled audit trails ensure that the data can remain undamaged or disclosed inflatedly, congruent to as the World Bank (2022) observes.

5.2. Confirmation by means of Third Party Guarantees

One of the main pillars of credible environmental governance is the third-party verification. Since extractive industries come with power imbalance, communities are usually suspicious of the information that has been created by mining companies. Situated in an independent verification, whether applied by the authorized laboratories, regulatory authorities, or identified auditors, they minimize the perceived bias and improve credibility of reported ESG measures

(Harrison, 2023). The good practice guidance (2021) by ICMM also suggests the need to have independent oversight particularly in the matters of tailings integrity and high-risk operational data.

The verification can be in or of various forms. Saline water samples can be subdivided to be tested concurrently at a different laboratory. Review of tailings monitoring indicators can be performed by an outside geotechnical engineer. Periodic compliance audits can be applied to worker safety statistics including TRIR or LTIFR. In any case, it is the third-party intervention that communities understand that information on the dashboard is correct, stable, and not subject to unilateral influence.

5.3. Governance Rules: Revise Cadence, Disclosure Protocols and SLAs

Well-defined rules about the governing become consistent and predictable in updating of data on how and when it is to be updated. Massa et al. (2024) emphasize the need to establish a consistent communication schedule to keep the stakeholders confident because inconsistent messages can create the feeling of suspicion or bewilderment. Dashboards must thus make concrete and front office promises regarding update frequency. For example:

- Indicators of air-quality are updated every day or every hour, depending on the presence of sensors.
- Weekly or weekly after each sample of the laboratory, water-quality summaries were provided.
- Safety indicators calculated every month or key events
- Real time cases updates on grievance dashboards

Service level agreements (SLAs) are also important and handy when it comes to the context of complaint handling. According to the World Bank (2022), effective OGMs adhere to particular response times such as: they admit complaints within 48 hours and they solve them within a certain period of time unless technical studies are needed. Posting SLAs on the dashboard also will increase accountability as cases where delay or no action is done can be posted publicly.

5.4. Multi- Stakeholder Oversight and Community Member Activity

The greater the presence of the community representatives, the civil society organizations, and workers in the oversight forms, the higher the legitimacy of a dashboard. Harrison (2023) claims that the co-confidentiality of governance schemes, e.g., the use of advisory bodies or the presence of community monitoring commissions, contributes to procedural justice and eliminating the power inequalities. OECD (2024) also advocate for the idea of community-participatory monitoring as one of the best practices in the current mining governance especially in the areas with a historical mistrust or Indigenous tendencies of stewardship.

The community monitoring may involve co-designed sampling program, collective discussing the significant indicators, or participation in verifying grievance-resolution measures. In cases where governance systems directly come with community voice, the dashboard is more a disclosure tool as well as a venue of joint environmental dominion.

5.5. Security and Privacy and Fidelity

Lastly, data governance must have controls to promote privacy especially in the grievance module. A lot of complaints can be relating to personal or sensitive data, and dashboards should anonymize or aggregate the data unless the explicit consent is received. Technical protection which provides protection to community members and workers and ensures that transparency is non-purposeless by the use of role authentication, encryption, and a secure API (Dougherty et al., 2025).

There is also security in the form of tampering or cyber intrusions that might breach trust. Since ESG dashboards involve public sources of truth, they are expected to be given similar rigor of cybersecurity as other vital information systems, such as version control and audit logs.

6. Evaluation, Implementation, Challenges and National Significance

It will also be the quality of design and the quality of assessment that makes an ESG transparency dashboard effective and not just feasible in various mining settings but also predictive of usual obstacles and nationally valuable as a sustainable mining development tool. This chapter brings together these four dimensions and provides a consistent structure of operationalizing dashboards as a tool of environmental governance, empowering communities and risk mitigation.

6.1. Evaluation plans: UX Testing and Interrupted Time-Series Analysis

Assessing an ESG dashboard calls for and must have a strong methodology that will form a response to the level of understanding to the user, its functionality, and its ability to transform the grievance outcomes over the course of time. The initial evidence falls under human-centered UX testing. It is observed that task-based usability tests, in essence, in the ones where the participants need to find certain indicators, make a risk judgment, or monitor grievance status, provide an objective idea of whether a dashboard is able to facilitate correct interpretation (Dougherty et al., 2025). The speed of completion of tasks, interpretation accuracy, and frequency of error are some of the metrics that are used to determine design aspects that need to be refined. These measures are particularly important as Massa et al. (2024) point out that the understanding becomes much more effective as long as the environmental data is displayed in the form of overlaid graphics and narrative information.

The quantitative testing should also be done not only on initial usability but also on the governance impact in the real world. The grievance-handling metrics to be evaluated are the recognition time, resolution time, and recurrence rates, which make an interrupted time- series (ITS) design suitable to measure the effect of dashboard deployment. ITS would measure changes in pre and post interventions, thus allowing plausible causation even in the form of nonrandomized study. According to the World Bank (2022), the faster response time can be demonstrated by the presence of any grievance system with the use of transparent tracking mechanisms; therefore, dashboards can be successfully discussed as an intervention that can lead to significant improvement to measure. Mining companies can also use stepped-wedge variations of ITS to enhance the statistical-objectivity by gathering data in several operating locations and making changes to the dashboard design staggered.

6.2. Implementation Scalability and Pathways

Implementation of dashboards should be stage-based and need to be scalable in order to reduce risk occurrence and maximize learning. The best starting point is a minimum viable product (MVP). An illustration is that an operator can drive a dashboard concentrated on the quality of waters and complaints two spheres of utmost interest to most communities (OECD, 2024). They can then make contrative changes based on user feedback, analysis, and consultation with the communities before increase the modules to others like air quality, tailings integrity, and worker safety.

The scaling is pegged on standardization of schemas and visual appearance. OECD (2024) makes it clear that the concept of mining modernization and community oversight instruments gains an advantage of open and interoperable data structure, where various locations can implement and modify components without replacing order systems. It is also easier to compare performance of operators within geographical authorities, as well as within supply-chain actors, due to standardized iconography, threshold categories and cadences of updates.

The low-resource settings demand specific adjustments to be made. Not every site is connected to the internet 24 hours and has real-time sensors and state-of-the-art laboratories. Even with manual uploads of laboratory data, low bandwidth displays, SMS-based communication and physical community displays, dashboards can still be used effectively, with scheduled updates providing printed summaries. As Dougherty et al. (2025) demonstrate, even plain digital interfaces, with the foundation on sound UX principles, have a highly positive impact on the understanding and access to information in the frontline users.

Associations, also, increase scalability. Institutional support and credibility can be built through engaging the regulators, civil society organizations and academic institutions in the development of dashboard. In case of high-risk data of operation like tailings, ICMM (2021) suggests multi-stakeholder participation. Partnerships based on communities such as participatory sampling schemes or collaborative grievance-review boards help in enhancing procedural justice together with local ownership (Harrison, 2023).

6.3. Difficulties, Constraints and Risk Management

Although ESG dashboards have a number of advantages, a number of challenges have to be considered when planning and implementing them. Oversimplification is one of such risks. In comparison to a complicated approach, plain-language communication can be more accessible, but might also miss significant subtext. As an illustration, a basic indicator of safe/unsafe administrating to the waters could cover the multistage interplay between various pollutants. Massa et al. (2024) remind that environmental risk communication should be provided in terms of simplicity but at the same time with accuracy that can be granted by providing layered explanations and referrals to technical documents achievements.

The other difficulty is the mistrust over data integrity. In situations with the background of conflict or other environmental events, the data released by companies are occasionally suspected to be inaccurate or incomplete by the community concerned. This is alleviated by verification by third-parties. Harrison (2023) telegraphically stresses that the focus on the independent assurance mechanisms is crucial to the restoration of the trust in the grievance and monitoring systems. Split sampling, external laboratory checks, and third-party engineering checks can be used by mining companies to ensure dashboard measures are accurate.

Another issue is the issue of digital inequity. The communities affected by mining also have unreliable digital connectivity or have access to mobile phones with low data capacity. It can be realized with low-band width design, a mobile-first structure, offering a wide choice of languages, and additional offline communication features, like printed briefs or community conferences, which can be used to achieve inclusivity (OECD, 2024). Darker color palettes and alternative text descriptions (accessible to the blind) make design accessible to even more stakeholders.

6.4. Implications and national value of the policy

On the national level, the ESG transparency dashboards will have significant worth in updating the environmental governance and developing the responsible production of mineral resources. Critical minerals, which are a necessity in renewable power supply, electric cars, and digital infrastructure, are also being subject to the demands of ethical sourcing and tacit operations. According to Fikru (2024), investors have become strongly dependent on the ESG rating and similar information when assessing the mining companies. The standardized and publicly visible dashboard system assists in alignment of mining operations in line with international expectation of investor.

Environmental justice can be facilitated by dashboards, as well, which provide communities with easy access to environmental and grievance data (World Bank, 2022). By introducing disclosure consistency, and since they are implemented at all sites, standardized dashboards provide a countrywide baseline of disclosure that allows regulators to track both regional patterns and hotKey areas of concern and enhance enforcement. OECD (2024) highlights that these tools can be used to address any differences between government control, community monitoring, and corporate coverage-and eventually enhance the management of this industry as a whole.

Additionally, the existence of dashboards increases the accountability of grievance mechanisms. The presence of visible recognition and timelines of resolution publicly provide operational incentives to act timely, mitigate the risk of a conflict and promote collaboration between communities and operators. Harrison (2023) states that this kind of transparency is structural in order to correct the systems that are seen as perceived fair and effective.

Overall, the ESG transparency dashboards are nationally relevant as the main tools of contemporary governance, investor trust, empowerment of communities, and sustainable development. Their effective implementation means that they need to be evaluated heavily, designed carefully, cooperate among various stakeholders, and be able to practice ongoing improvement, although the rewards run far beyond the mining sites to the general public concern.

7. Conclusion

In conclusion, a plain language, structured information-layered, participatory UX testing, good governance, and empirical assessment ESG transparency dashboard is a viable way forward to facilitate a better understanding, increase trust, and improve grievances-resolution indicators in mining and processing scenarios. Although digital dashboards are not a panacea, when combined with effective institutional commitments and mechanisms of verification, it can have a central role in transforming extractive governance to a more efficient version of its traditional form. By implementing the proposed design and assessment scheme (iterative UX testing and interrupted time-series), pilots will offer the evidence to scale the methodology and incorporate it into policy frameworks that will support the idea of sustainable supply of minerals and community wellbeing.

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