

Strategic Crisis Governance and Reputation Dynamics in Volcanic Tourism Destinations

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Abstract

This study investigates the structural interactions between institutional crisis management and consumer perceptions in volatile environments by developing the Strategic Governance–Reputation Dynamics Framework. Adopting a critical realist paradigm, this comparative qualitative desk study synthesizes dual secondary document streams (2024–2026) to evaluate two prominent volcanic destinations in Indonesia experiencing contrasting disruptions: Mount Merapi (acute, exogenous geological cycles) and Mount Bromo (creeping, endogenous anthropogenic-environmental stresses). The findings reveal that physical hazard exposure does not automatically result in destination reputation decline. Instead, its effects are mediated by the quality of strategic crisis governance, including institutional coordination, digitally enabled Pentahelix collaboration, and the behavioral preparedness of front-line tourism actors. Destination reputation recovery is strongly path-dependent, with destination credibility serving as the principal mechanism for stabilizing destination image and restoring future visit intentions. The analysis further identifies two critical resiliency buffers—risk-tolerant thanatourism psychographics and traditional ecological wisdom—that moderate the adverse impacts of crises and support long-term destination resilience. These findings advance a non-linear explanation of crisis recovery by demonstrating that effective governance can decouple hazard exposure from reputational damage. This research provides a novel theoretical model and actionable strategic blueprints for regional tourism authorities to strengthen reputational capital and accelerate sustainable post-crisis recovery in the international tourism market.

Keywords: *Volcanic Tourism; Strategic Crisis Governance; Reputation Dynamics; Destination Credibility; Thanatourism; Risk Communication.*

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INTRODUCTION

Volcanic tourism is a rapidly growing niche within special-interest tourism globally, yet it is inherently volatile because of its extreme risk profile. As a nation situated along the Pacific Ring of Fire and home to some of the world's most active volcanoes, Indonesia faces a complex structural dilemma in balancing economic tourism exploitation with natural disaster risk mitigation (Nurjanah et al., 2026). Iconic destinations such as the Mount Merapi region in Yogyakarta and Mount Bromo in East Java serve not only as magnets for millions of domestic and international tourists but also as crisis epicentres, highly vulnerable to large-scale environmental degradation driven by both natural and anthropogenic activities (Salehi et al., 2025). When a crisis or eruption occurs, tourism's operational stability is instantly paralyzed, triggering a state of force

majeure that disrupts legal instruments, environmental contracts, and regional governance frameworks (Admiral et al., 2025).

The ramifications of a crisis in volcanic destinations extend far beyond physical infrastructure damage, cascading into massive depletion of destination credibility and public reputation. In the contemporary tourism industry, reputation is an intangible asset highly sensitive to risk perceptions. Severe failures in risk and safety management during the acute phase of a crisis can obliterate a positive destination image built over decades, subsequently causing a drastic decline in future visit intentions (SUHUD et al., 2024). Consequently, a destination's post-crisis resilience depends heavily on reputation dynamics—specifically, how effectively tourism authorities sustain credibility, manage brand awareness, and implement transparent, adaptive risk communication amid heightened uncertainty (Nurjanah et al., 2026; SUHUD et al., 2024).

To mitigate the destructive impacts of crises on reputation, Strategic Crisis Governance becomes imperative. Contemporary tourism crisis management can no longer rely on reactive, top-down approaches by central governments; instead, it must shift toward an integrated governance orientation that adaptively engages multi-stakeholder networks (Suryawan et al., 2026).

At the operational level, local actors' preparedness—particularly tourist village managers in active volcanic areas—forms the first line of defence against disaster impacts (Wijaya et al., 2025). Strengthening Pentahelix-based coordination and strategically leveraging digital technologies enable local communities to enhance economic resilience while improving crisis responsiveness (Susenohaji et al., 2026). Moreover, strategic governance should also mitigate environmental crises resulting from irresponsible tourist behavior through structured community engagement, thereby supporting long-term ecological sustainability (Suhardono, Fitria, et al., 2024).

Despite the growing literature on tourism crisis management, a key theoretical gap remains. Existing studies predominantly examine disaster governance, evacuation systems, environmental mitigation, destination image recovery, or tourist behavior as separate streams of inquiry. Consequently, an integrated analytical framework still insufficiently explains the mechanisms through which Strategic Crisis Governance shapes Destination Reputation Dynamics during and after volcanic crises. Moreover, research has paid limited attention to how governance capacity, destination credibility, risk communication, and resiliency buffers collectively influence post-crisis reputation recovery in volcanic tourism destinations.

Empirical evidence from Indonesia reveals a unique anomaly: exposure to crises does not necessarily permanently paralyze the tourism market. If risk governance is perceived as credible and transparent, volcanic hazards can become a distinct allure for adventure tourism and thrill-seeking travellers patronizing thanatourism (Tripathy et al., 2026). Additionally, social capital in the form of local ecological wisdom and traditional cultural narratives often serves as a moral anchor, ensuring the broader public perceives the destination as sacred, safe, and highly resilient (Schlachter et al., 2025). Nevertheless, the exact mechanisms through which strategic coordination among governance actors empirically influences these reputational fluctuations and recoveries remain comprehensively unmapped.

To address this gap, this article empirically analyses the causal relationships and interactions between Strategic Crisis Governance and Reputation Dynamics in Indonesian volcanic tourism destinations. This study uses a comparative case study approach, focusing on two primary volcanic destinations with contrasting crisis dimensions: Mount Merapi (representing recurrent, naturally occurring volcanic crises) and Mount Bromo (representing mixed volcanic crises compounded by anthropogenic incidents). Through this empirical contribution, this study seeks to formulate a novel theoretical model of integrated volcanic tourism crisis governance that focuses not only on physical safety but also on protecting, adapting to, and recovering a destination's reputational capital in the international arena.

LITERATURE REVIEW

The Paradox of Allure, Hazard, Volatility, and Force Majeure

Volcanic landscapes possess globally recognized aesthetic, scientific, and conservation value, serving as a powerful catalyst for international and domestic visitor flows (Popov et al., 2024). In special-interest tourism, active volcanic regions offer a unique geographical allure, characterized by dramatic topography, geothermal features, and distinct ecological niches. In Indonesia, this geo-tourism pull is highly pronounced in destinations like Mount Bromo, where destination image, perceived credibility, and reputational capital significantly influence international visit intentions (SUHUD et al., 2024). Furthermore, these landscapes are deeply intertwined with sacred ecologies, local folklore, and traditional cultural narratives that transform active geological hazards into highly valued symbolic environments (Schlacher et al., 2025).

Taken together, these studies suggest that the attractiveness of volcanic tourism is shaped not only by exceptional natural landscapes but also by interactions among environmental uniqueness, cultural meaning, and destination reputation. However, the same characteristics that enhance destination attractiveness simultaneously increase its exposure to environmental vulnerability and management complexity (Popov et al., 2024; Schlacher et al., 2025; SUHUD et al., 2024).

The fundamental paradox of volcanic tourism lies in the direct juxtaposition of this aesthetic and cultural allure against inherent geological volatility and acute ecological vulnerability. Tourism authorities and regional planners must constantly balance maximizing tourism growth with enforcing stringent disaster-risk mitigation protocols in continuously active zones (Nurjanah et al., 2026). Modern anthropogenic pressures further intensify this vulnerability. Mass recreational activities within fragile volcanic ecosystems, such as the Bromo Tengger Semeru National Park, have been shown to accelerate soil degradation, erosion, and the deterioration of ecosystem services (Salehi et al., 2025). Irresponsible tourist behavior may also trigger catastrophic environmental events, including large-scale forest fires, generating severe ecological, social, and economic consequences for surrounding destinations (Suhardono, Fitria, et al., 2024).

Collectively, these findings indicate that geological processes do not solely determine volcanic tourism risk. Instead, destination vulnerability emerges from the interaction between natural hazards and human-induced environmental pressures, requiring governance approaches that simultaneously address disaster mitigation and sustainable visitor management (Nurjanah et al., 2026; Salehi et al., 2025; Suhardono, Fitria, et al., 2024).

When geological volatility culminates in acute volcanic eruptions or secondary environmental disasters, the destination rapidly shifts from a recreational space to one characterized by legal, operational, and physical disruption. Major volcanic crises, such as the eruptions of Mount Merapi, invoke the legal doctrines of force majeure and the "impossibility of performance," rendering existing tourism operations and contractual arrangements temporarily inoperable (Admiral et al., 2025). Responding to these systemic shocks requires integrated early warning systems, evacuation planning, and adaptive environmental governance (Suryawan et al., 2026).

Overall, the literature converges on the view that volcanic crises extend beyond physical damage. They fundamentally challenge destinations' institutional capacity to sustain operational continuity, coordinate multiple stakeholders, and preserve long-term tourism resilience. This synthesis provides the conceptual foundation for examining Strategic Crisis Governance as the principal mechanism through which destinations respond to escalating volcanic risks.

Strategic Crisis Governance

The paradigm shift from conventional, centralized disaster management to Strategic Crisis Governance represents a fundamental evolution in contemporary tourism theory. Consistent with Stakeholder Theory, effective crisis governance depends on coordinated interactions among

multiple actors whose collective actions determine destination resilience, rather than on isolated government interventions. In highly volatile environments, governance therefore requires an integrated framework that balances economic, social, and environmental objectives while strengthening long-term institutional resilience (Romario Aranibar Ramos et al., 2025). At the macro level, environmental policies, evacuation planning, and early warning systems provide the structural foundation for mitigation, whereas their effectiveness ultimately depends on collaboration across multiple governance levels (Suryawan et al., 2026).

The Pentahelix model operationalizes this collaborative perspective by integrating academia, business, community, government, and media into a coordinated governance network. Rather than functioning as independent stakeholders, these actors collectively enhance crisis preparedness, resource mobilization, information sharing, and adaptive decision-making. In vulnerable destinations such as Bromo Tengger Semeru National Park, digital village (desa digital) initiatives further strengthen this coordination by facilitating real-time communication and local capacity development (Susenohaji et al., 2026). Collectively, these studies indicate that governance effectiveness depends on the quality of stakeholder integration rather than the capacity of any single institution (Ndlovu, 2025; Susenohaji et al., 2026).

However, institutional coordination alone is insufficient. Empirical evidence from Mount Merapi shows that disaster governance often underperforms when local tourism managers' behavioral preparedness remains weak (Wijaya et al., 2025). In mountain and geo-tourism destinations, localized knowledge, community participation, and indigenous management practices become critical complements to formal governance systems because they directly influence visitor safety and operational continuity (Koe & Loukes, 2024; Miczka & Poulain, 2026). These findings suggest that strategic governance is a multi-level capability that integrates formal institutions with community-based adaptive capacity.

Strategic crisis governance must also address the interaction between natural hazards and anthropogenic risks. Human-induced environmental crises, including forest fires caused by irresponsible tourist behavior, require structured community engagement alongside corporate sustainability initiatives (Suhardono, Fitria, et al., 2024). At the organizational level, sustainable business practices and Green Human Resource Management contribute to operational continuity during crises (Atmoko et al., 2026), while community-based hospitality systems supported by local wisdom reinforce environmental stewardship and destination safety (Guspul et al., 2025; Zaim et al., 2025). Taken together, the literature demonstrates that Strategic Crisis Governance extends beyond emergency response, functioning instead as an integrated governance capability that combines institutional coordination, stakeholder collaboration, organizational sustainability, and community resilience to sustain destination performance during crises.

Destination Reputation Dynamics

In the highly competitive global tourism marketplace, a destination's reputation constitutes a strategic asset that directly influences long-term market viability and tourist decision-making. In high-risk environments such as active volcanic destinations, reputation is not static but a dynamic, multidimensional construct encompassing destination awareness, image, association, and credibility (Suhud et al., 2024). Distinctive physical and cultural characteristics initially shape destination awareness and positive associations, while destination image and credibility ultimately determine tourists' willingness to visit. Empirical evidence indicates that these dimensions mutually reinforce each other during periods of environmental stability, strengthening perceptions of safety, authenticity, and destination attractiveness (Suhud et al., 2024). Collectively, these studies suggest that destination reputation evolves through continuous interactions between visitor perceptions and changing environmental conditions rather than remaining a fixed marketing asset.

Conversely, volcanic crises disrupt this reputational equilibrium by rapidly altering tourists' perceptions of safety and environmental quality. Tourist stay decisions are strongly influenced by environmental conditions, infrastructure quality, and hospitality services (Guspul et al., 2025; Zaim et al., 2025). When these physical and psychological attributes deteriorate during a crisis, perceived risk rises faster than objective hazard conditions, accelerating the erosion of destination image and credibility. As localized failures become generalized to the broader destination, tourists increasingly question the reliability of the entire tourism system, leading to declining visitation across both affected and neighboring areas. These findings show that reputation loss is driven not solely by the occurrence of a disaster, but by how tourists interpret the destination's ability to manage the crisis effectively.

Risk Communication therefore emerges as a critical governance mechanism for protecting destination reputation. In Indonesia's highly active volcanic environment, effective crisis communication must bridge disaster management practices with tourists' external risk perceptions (Nurjanah et al., 2026). Rather than merely disseminating hazard information, transparent communication reduces uncertainty, shapes media narratives, and reinforces destination credibility during disruptions. Accordingly, effective risk communication transforms crisis management from an operational function into a strategic reputational resource that signals institutional competence and organizational resilience.

Ultimately, destination reputation is sustained through the interaction between formal risk communication and decentralized community responsiveness. Aligning government communication, local preparedness, and multi-stakeholder collaboration enables destinations to maintain public confidence despite ongoing environmental uncertainty (Susenohaji et al., 2026; Wijaya et al., 2025). Conversely, inconsistencies between institutional messaging and field-level preparedness accelerate reputational decline by undermining destination credibility. Taken together, the literature indicates that destination reputation should be understood not merely as a marketing outcome but as the cumulative manifestation of strategic governance capability, institutional credibility, and adaptive community resilience. This perspective also provides the conceptual basis for examining the resiliency buffers that moderate reputation recovery following volcanic crises.

Resiliency Buffers

The capacity of volcanic tourism destinations to withstand, absorb, and recover from systemic crises is heavily dependent on underlying socio-psychological and socio-cultural mechanisms that act as structural resilience buffers. While conventional tourism models assume that acute exposure to natural hazards uniformly deters travel demand, contemporary empirical evidence reveals a complex counter-narrative. One primary resilience buffer manifests through the psychographic stratification of modern travelers, specifically the growing market segment driven by adventure tourism and thanatourism (dark tourism). In destinations facing recurrent environmental adversity, crises can be paradoxically commodified as viable business propositions that target customer segments that patronize high-risk environments (Tripathy et al., 2026). Grounded in Edgework theory and sensation-seeking behavioral frameworks, these thrill-seeking travelers are drawn to resilient destinations where enhanced disaster and forecasting capabilities paradoxically make the physical experience of hazard monitoring an active tourist allure (Tripathy et al., 2026). Consequently, a persistent volcanic hazard does not automatically extinguish consumer demand; instead, it shifts the psychographic composition of the visitor market, replacing risk-averse mass tourists with resilient, risk-tolerant segments whose active presence stabilizes the destination's economic baseline during post-crisis recovery phases.

Beyond psychographic market shifts, the primary localized buffer that shields a destination's reputational capital from permanent decay is anchored in the host community's socio-ecological fabric. In Indonesian volcanic landscapes, such as the Dieng Plateau, long-term operational

resilience is structurally reinforced by the survival of deep-seated ecological wisdom, folklore, and sacred ecologies deeply embedded within historical heritage (Schlacher et al., 2025). These traditional cultural narratives and metaphysical frameworks do not merely reflect abstract heritage; rather, they function as vital cognitive maps that transmit practical ecological knowledge, regulate human-nature relationships, and shape how local communities psychologically navigate active geological transformations (Schlacher et al., 2025). By framing volcanic eruptions not as arbitrary catastrophes but as sacred, regenerative, and culturally coherent cycles of nature, this ecological wisdom instills a profound sense of psychological endurance within the host community. This localized calm prevents social panic, fosters immediate collective solidarity, and projects an external narrative of structural and social stability that effectively defuses the alarmist framing often propagated by international media networks.

Furthermore, this socio-cultural resilience buffer is operationally activated when traditional ecological wisdom is structurally integrated with modern, localized land management frameworks. The structural stability of decentralized hospitality ecosystems—such as regional homestay sectors in rural Java—relies heavily on synthesizing local wisdom with proactive rural land management to ensure environmental comfort and support visitor stay decisions during volatile periods (Guspul et al., 2025; Zaim et al., 2025). When formal administrative disaster protocols fail to provide immediate operational relief, these micro-level hospitality networks rely on their internalized cultural and operational capital to maintain baseline safety landscapes and provide authentic, supportive environments for remaining travelers. This localized resilience is further amplified when community-managed networks leverage digital village architectures to rapidly coordinate grassroots safety measures, distribute factual risk data, and preserve the destination's perceived credibility from the bottom up (Susenohaji et al., 2026). By combining traditional ecological worldview with adaptive, community-led infrastructure management, the destination creates a comprehensive buffer system that effectively absorbs the shock of natural crises.

Ultimately, these resiliency buffers—operating at the intersection of alternative tourist psychology and localized cultural capital—fundamentally transform our understanding of destination reputation dynamics. They show that a volcanic destination's post-crisis survival is not governed solely by macro-level government intervention or massive public relations campaigns. Instead, the enduring reputational integrity of an active volcanic zone is continuously supported by the invisible alignment between the psychographic demands of sensation-seeking travelers and the deep socio-ecological resilience of local community actors (Tripathy et al., 2026; Wijaya et al., 2025). Recognizing these unconventional buffers allows researchers and destination managers to move beyond rigid, top-down crisis models and formulate integrated governance frameworks that systematically harness alternative market demands and localized indigenous wisdom to institutionalize continuous, self-sustaining resilience.

The Governance-Reputation Matrix

The synthesis of the preceding literature culminates in the Governance-Reputation Matrix, a novel, integrated conceptual framework that maps the multidimensional interactions between institutional crisis management and consumer perception in active volcanic tourism destinations. Traditional models within tourism crisis studies frequently treat administrative disaster mitigation and brand equity as distinct, parallel streams of research. This fragmented approach creates a theoretical blind spot regarding how structural governance mechanisms directly shape, buffer, and rehabilitate a destination's reputational assets during acute and post-crisis phases. The framework proposed in this study bridges this conceptual divide by positioning Strategic Crisis Governance as the structural independent engine that determines the evolutionary trajectory of Reputation Dynamics, the primary dependent outcome governing a destination's market survival and resilience.

Within this structural matrix, specific contextual forces, natural constraints, and socio-cultural buffers mediate and moderate the relationship between governance and reputation. The matrix's foundational baseline is defined by the Volcanic Paradox, in which the intrinsic landscape aesthetic and deep-seated cultural allure are continually threatened by hazard volatility and the recurrent risk of operational paralysis due to force majeure (Admiral et al., 2025; Popov et al., 2024). When a volcanic disruption breaks this baseline stability, the speed and effectiveness of the destination's recovery depend on the alignment of the macro-level Strategic Crisis Governance apparatus. This apparatus is powered by integrated climate and environmental governance policy (Suryawan et al., 2026), structured multi-stakeholder Pentahelix networks enabled by digital village infrastructures (Susenohaji et al., 2026), and the proactive internalization of corporate sustainability practices (Atmoko et al., 2026). As a result, robust strategic governance acts as an institutional filter that dictates how effectively physical crises are contained, managed, and structurally mitigated.

This governance configuration directly stabilizes or destabilizes Reputation Dynamics. When multi-stakeholder coordination is agile and paired with transparent, strategic risk communication, it preserves destination credibility, stabilizes destination image, and counters negative perceptions associated with active geological hazards (Nurjanah et al., 2026; SUHUD et al., 2024). Conversely, if micro-level local community actors and tourist village managers lack behavioral preparedness (Wijaya et al., 2025) or if community engagement fails to prevent tourist-induced anthropogenic crises, such as forest fires (Suhardono, Fitria, et al., 2024), broader destination credibility collapses. This structural failure accelerates the decline in tourist visit intentions and destabilizes the local hospitality sector, rendering standard destination marketing efforts ineffective (Guspul et al., 2025; Zaim et al., 2025). Thus, the matrix establishes that destination reputation is not merely a marketing output, but a structural reflection of underlying multi-actor governance integrity.

Finally, the framework introduces two critical, unconventional Resiliency Buffers that moderate this governance-reputation pathway, preventing permanent abandonment of the destination even under severe crisis conditions. On the demand side, active volcanic hazards shift the psychographic composition of the visitor market, unlocking alternative dark tourism and thanatourism demands among thrill-seeking, risk-tolerant segments who view disaster-prone environments as viable travel options (Tripathy et al., 2026). On the supply side, the host community's internal social capital—manifested through local ecological wisdom, traditional folklore, and sacred ecologies—functions as a powerful socio-cultural shock absorber, maintaining social calm and projecting an image of spiritual and structural stability to the outside world (Schlacher et al., 2025). When integrated with proactive rural land management, these combined buffers allow the destination to maintain baseline economic and social operations during the acute phase of a crisis. By mapping these interconnected pathways, the Governance-Reputation Matrix provides a comprehensive, empirically testable framework that guides the subsequent cases and analytical models of this study.

METHODS

Research Design and Case Selection Rationale

This study adopts a comparative qualitative desk study design, rooted in a critical realist paradigm, to investigate the multidimensional interactions between Strategic Crisis Governance and Reputation Dynamics across two prominent volcanic tourism destinations in Indonesia: Mount Merapi (Yogyakarta) and Mount Bromo (East Java). A purely desk-based, secondary research framework is highly rigorous and appropriate for examining macro-institutional structures, regulatory alignments, and published empirical data across distinct spatial contexts (Ndlovu, 2025; Tripathy et al., 2026). Using a qualitative comparative analysis (QCA) approach, this

study triangulates secondary data to map how institutional configurations filter the reputational fallout of active hazards. The comparative analysis follows a maximum variation sampling of secondary case literature, as systematically delineated in Table 1.

Table 1. Desk Study Case Variation and Documentary Source Matrix

Case Site Dimension	Mount Merapi Case Context	Mount Bromo Case Context	Key Secondary Data & Literature Streams
Primary Crisis Typology	High-frequency, acute natural/geological eruptive cycles.	Mixed-crisis typology (Geological hazard compounded by anthropogenic incidents).	(Nurjanah et al., 2026; Suhardono, Hermawan, et al., 2024)
Socio-Ecological Stresses Analyzed	Urban-gateway air pollution and high-altitude vegetative stress.	Intensive tourist-induced soil degradation and human-induced forest fires.	(Ardianto et al., 2024; Salehi et al., 2025)
Institutional & Policy Boundaries	Predictable emergency mandates, state-level zoning, and community protocols.	Overlapping national park regulations vs. decentralized regional administration.	(Admiral et al., 2025; Suryawan et al., 2026)
Socio-Cultural Resilience Buffers	Javanese sacred ecologies, folklore, and internalized risk traditions.	Digital village Pentahelix frameworks and community homestay adaptations.	(Schlachter et al., 2025; Susenohaji et al., 2026)

Source: Research data, 2026

As shown in Table 1, integrating these distinct documentary records provides a robust empirical landscape for testing the explanatory power of the Governance-Reputation Matrix without requiring primary fieldwork.

Data Collection Methods and Multi-Stream Sourcing

To ensure validity and reproducibility, data collection followed a systematic dual-stream sourcing of secondary materials. Rather than raw field generation, data collection involved gathering peer-reviewed empirical studies, spatial-environmental evaluations, policy white papers, legal briefs, and public data repositories published between 2024 and 2026. This archival architecture achieves structural triangulation via two distinct secondary streams, as illustrated in Figure 1.

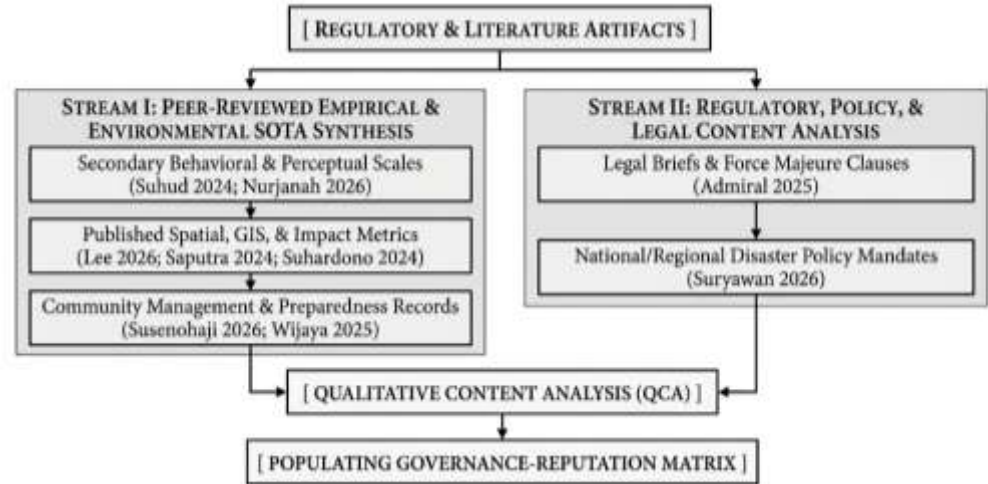


Figure 1. Methodological Architecture for Dual-Stream Secondary Sourcing and Meta-Synthesis

Source: Research data, 2026

As schematized in Figure 1 (Stream I), the first stream synthesizes published empirical datasets, qualitative focus group records, and secondary psychographic scales extracted from peer-reviewed academic literature. This stream captures consumer-side reputation metrics by extracting existing data patterns, assessing destination awareness, image, and credibility in Javanese volcanic arcs (SUHUD et al., 2024), alongside documented tourist reactions to formal risk communication channels (Nurjanah et al., 2026). To ground these perceptions in physical reality, Stream I also incorporates published spatial-environmental evaluations and material impact data from the literature. This includes secondary GIS tracking of active travel networks and accessibility configurations within fragile mountain terrains (Lee et al., 2026; Papakostas et al., 2025), as well as published environmental degradation metrics—such as urban air pollution indexing, soil compaction from animal trampling, and post-fire forest damage evaluations (Ardianto et al., 2024; Salehi et al., 2025; Suhardono, Hermawan, et al., 2024). Finally, it integrates behavioral data regarding the risk management and disaster preparedness structures of local village networks and front-line hospitality systems (Susenohaji et al., 2026; Wijaya et al., 2025).

Corresponding to Figure 1 (Stream II), the second stream captures the formal institutional, administrative, and legal structures that bound Indonesian crisis governance. This stream involves collecting national and regional policy frameworks from disaster management agencies (BNPBB/BPBD) and environmental policy mandates governing climate-hazard adaptations (Suryawan et al., 2026). Additionally, the study incorporates formal court filings, contract clauses, and administrative dockets on force majeure exemptions and the impossibility of performance following severe eruptive disruptions to understand the structural legal and boundary constraints faced by tourism operators (Admiral et al., 2025).

Document Coding and Qualitative Content Analysis (QCA)

The analytical framework applied to this dual-stream secondary database relies on systematic Qualitative Content Analysis (QCA) and cross-case thematic matrix mapping. The analysis follows a deductive coding protocol based on the predetermined dimensions of the Governance-Reputation Matrix. First, textual data from Streams I and II underwent iterative conceptual coding in NVivo. Coding targets focused on institutional coordination nodes (Pentahelix networks), digital village deployment metrics, and corporate green hospitality internalization (Atmoko et al., 2026). These codes were systematically cross-referenced with community-level social capital indicators, such as local ecological wisdom and narratives of sacred space preservation (Schlachter et al., 2025).

Second, secondary quantitative metrics—such as tourist stay decisions, destination credibility indices, and homestay environmental comfort ratings—were extracted and synthesized into standardized performance charts (Guspul et al., 2025; Zaim et al., 2025). Finally, these qualitative code frequencies and secondary quantitative indicators from both streams were integrated into a cross-case comparative meta-matrix. This synthesis allows the desk study to trace how varying configurations of Strategic Crisis Governance explain recovery velocity, resilience capacity, and the long-term evolution of Reputation Dynamics across the Merapi and Bromo case records.

RESULTS AND DISCUSSION

Empirical Synthesis of Cross-Case Crisis Typologies and Environmental Stressors

The systematic meta-synthesis of published empirical dockets and secondary case literature reveals a profound structural divergence in the material reality, severity, and typology of crises operating across the Indonesian volcanic tourism landscape. Grounded in a critical realist interpretation of secondary data, the physical environment is not merely a passive backdrop for tourism activities; instead, it operates as an active, volatile agent that dictates the operational limits of regional destination ecosystems. The secondary documentary records compiled in this

desk study establish that while both Mount Merapi and Mount Bromo suffer severe operational and economic shocks during periods of disruption, the underlying mechanics of these crises represent entirely different paradigms: acute, exogenous geological volatility versus compounding, endogenous anthropogenic-environmental degradation.

High-Frequency Natural Volatilities in the Merapi Gateway

Documentary analysis of published data on Mount Merapi delineates a crisis profile governed by cyclical, high-intensity, naturally occurring geological forces. As one of the world's most active stratovolcanoes, Merapi's eruptions pose an immediate, unyielding threat to its primary urban and infrastructural gateway, Yogyakarta City. Secondary empirical dockets underscore that Yogyakarta functions as a dense regional center for government, education, transportation, and tourism, making its sprawling mobility networks especially vulnerable to spatial paralysis during volcanic crises (Ardianto et al., 2024).

During acute eruptive events, volcanic ash and pyroclastic deposition significantly compound pre-existing environmental stresses in this regional hub. Documentary findings indicate that the gateway's baseline ecological health is already severely burdened by high concentrations of air pollutants and microparticulates from dense motorized vehicle emissions and rapid urbanization (Ardianto et al., 2024). The sudden injection of volcanic ash into this pre-stressed atmosphere triggers immediate regional paralysis, rendering active travel corridors inaccessible, shutting down aviation infrastructure, and placing massive physiological and structural strains on the urban-tourism nexus.

Consequently, the secondary literature demonstrates that Mount Merapi forces regional authorities into a permanent structural paradox. Otoritas pariwisata and disaster management networks must continuously manage a delicate, high-stakes equilibrium between driving regional tourism economic growth and enforcing rigid, state-level disaster risk mitigation and communication protocols within a highly volatile, active hazard zone (Nurjanah et al., 2026). The crisis at Merapi is therefore a classic exogenous geological crisis, where macro-level institutional systems must focus primarily on physical containment, evacuation speed, and preserving gateway connectivity.

Anthropogenic-Compounded Ecological Crises in Mount Bromo

In sharp contrast to the purely natural forces dominating the Merapi gateway, the secondary data stream regarding Mount Bromo reveals a fundamentally different crisis typology—one in which baseline natural volatilities are systematically accelerated and transformed by intensive anthropogenic pressures. The Bromo Tengger Semeru National Park (BTS-NP) features a highly celebrated, hyper-aesthetic volcanic landscape that attracts hundreds of thousands of domestic and international visitors each year. However, published ecological evaluations demonstrate that this massive recreational popularity has catalyzed severe, creeping environmental degradation that fundamentally compromises the area's systemic resilience (Salehi et al., 2025).

Documentary evidence reveals that unmanaged mass tourism activities—specifically intensive motorized-vehicle traffic, heavy off-road traversal, and horse trampling across the fragile volcanic sand sea—inflict severe soil compaction, accelerate mechanical soil degradation, and cause a widespread decay of critical ecosystem services within the national park (Salehi et al., 2025). This continuous, tourist-induced degradation creates a highly vulnerable socio-ecological matrix. By stripping away the landscape's vegetative cover and altering natural soil structures, mass recreational behaviors render the arid, high-altitude volcanic ecosystem hypersensitive to human error and climate fluctuations.

Secondary records clearly detail the catastrophic outcomes of this compounding vulnerability in the high-magnitude Bromo fire incident. Published case materials show that irresponsible tourist behaviors can instantly ignite large-scale forest fires, exposing deep institutional gaps in

environmental protection, visitor surveillance, and regulatory enforcement (Suhardono, Fitria, et al., 2024). The fallout of these tourist-induced fires extends far beyond short-term operational closures; they inflict irreversible ecological consequences, wipe out biodiversity, paralyze local community livelihood frameworks, and trigger a total socio-economic collapse for the surrounding destination gateway (Suhardono, Fitria, et al., 2024). Mount Bromo thus represents a distinct endogenous, mixed anthropogenic-environmental crisis, in which the core disruptive force is not the volcano itself but rather the failure to govern human behavior within a fragile ecosystem.

Materiality of Structural Disruption: A Comparative Synthesis

When juxtaposed within a cross-case meta-matrix, the secondary documentary evidence reveals a clear theoretical bifurcation in how crisis materiality disrupts the tourism framework. Table 2 systematically maps this divergence to illustrate the contrasting empirical realities that crisis governance networks must filter.

Table 2. Comparative Material Synthesis of Cross-Case Crisis Typologies

Material Dimension	Mount Merapi Case Record	Mount Bromo Case Record	Structural Governance Implication
Crisis Genesis	Exogenous (Purely natural, cyclical geological eruption).	Endogenous-Mixed (Geological asset amplified by human error).	Shifting focus from emergency response to proactive behavioral control.
Primary Environmental Stressor	Atmospheric contamination, heavy ash deposition, gateway paralysis.	Soil degradation, animal/vehicle trampling, tourist-induced forest fires.	Transitioning from macro air-quality tracking to micro land-use regulation.
Spatial Scale of Immediate Impact	Macro-regional (Disrupts primary urban hubs, logistics, and aviation).	Micro-localized (Disrupts fragile conservation zones and conservation parks).	Demands centralized state-level interventions rather than decentralized local protection.
Infrastructural Vulnerability	Total paralysis of active travel networks and urban-tourism gateways.	Sudden destruction of ecological buffers and local community assets.	Requiring legal <i>force majeure</i> readiness vs. agile multi-stakeholder safety nets.
Core Database Sources	(Ardianto et al., 2024; Nurjanah et al., 2026)	(Salehi et al., 2025; Suhardono, Fitria, et al., 2024)	Synthesized secondary streams (Stream I & II).

Source: Research data, 2026

The empirical synthesis, structured in Table 2, demonstrates that Mount Merapi represents an acute, high-intensity shock that overpowers human agency, requiring a governance system built around structural engineering, rigid zoning, and macro-regional crisis communication. Conversely, Mount Bromo represents a creeping, systemic vulnerability in which human agency is the primary destabilizing factor, requiring a governance architecture centered on stringent carrying-capacity enforcement, community-based environmental surveillance, and regulation of tourist behavior.

Ultimately, this comparative synthesis shows that the physical materiality of a crisis directly dictates the destination's operational boundaries. If the strategic crisis governance apparatus fails to diagnose whether a destination is suffering from an exogenous geological shock or an endogenous anthropogenic failure, the institutional response will inevitably mismatch the crisis's material reality, accelerating the subsequent decay of the destination's international reputation.

Comparative Institutional Analysis of Strategic Crisis Governance

Operationalizing crisis governance across the diverse natural and anthropogenic risk profiles of Mount Merapi and Mount Bromo reveals a highly complex, fragmented regulatory landscape. Through a critical realist evaluation of secondary policy frameworks and institutional case records, this subsection maps how macro-level administrative directives interact with localized multi-actor networks. The secondary documentation demonstrates that a destination's institutional resilience depends heavily on the alignment between formal legal structures and grassroots networks' decentralized capacity to deploy resources dynamically during acute disruptions.

Contractual Impossibility and Formal Risk Mandates at Mount Merapi

The institutional architecture governing Mount Merapi is characterized by highly formal, state-centric, and top-down emergency management frameworks. Because Merapi experiences recurrent, high-intensity eruptive cycles that threaten massive regional infrastructures, the state—primarily through centralized disaster management agencies (BNPB and regional BPBD)—strictly controls spatial zoning and acute emergency response systems. However, analysis of secondary legal and administrative records indicates that this rigid, top-down structure imposes significant legal and financial strain on private and commercial tourism operators in the gateway corridor.

When major eruptive events occur, the state's mandatory exclusion zone declarations immediately invoke severe legal and operational constraints on pre-existing environmental and commercial hospitality contracts. Documentary evidence indicates that the extreme destruction caused by historical eruptions requires applying the legal doctrine of "impossibility of performance" and invoking formal force majeure clauses in environmental and commercial agreements (Admiral et al., 2025). This legal displacement means that while top-down state intervention successfully prioritizes short-term human evacuation velocity, it simultaneously triggers total operational and contractual paralysis for local tourism enterprises. Commercial operators are left without legal recourse or immediate rehabilitation pathways as pre-existing contracts become legally unperformable.

Furthermore, while these formal state directives provide strong, centralized control over macro-regional transport and security channels, they often struggle to integrate long-term adaptive risks. Tourism authorities face structural difficulties in embedding comprehensive early warning systems and evacuation frameworks into everyday regional environmental policies (Suryawan et al., 2026). The secondary literature underscores that macro-level hazard systems at Mount Merapi prioritize sudden emergency containment over proactive, integrated climate and environmental risk adaptation, leaving commercial and regional operators highly vulnerable to prolonged post-crisis economic stagnation once the acute eruptive phase concludes.

Pentahelix Synergy and Digital Infrastructure Needs at Mount Bromo

In contrast to the highly centralized, state-driven mandates at Mount Merapi, Mount Bromo's governance landscape is a multi-layered, fluid, and often overlapping administrative matrix. Because the destination lies within the jurisdiction of the Bromo Tengger Semeru National Park (TNBTS) and borders several decentralized regional regencies, managing risks requires complex, multi-stakeholder negotiations. Secondary policy records indicate that the escalating risks of environmental disasters within this fragile conservation zone—such as the high-magnitude, tourist-induced forest fires—cannot be contained by single bureaucratic agencies; instead, they require the urgent institutionalization of integrated climate and environmental governance frameworks supported by diverse stakeholder networks (Suryawan et al., 2026).

To bridge these overlapping regulatory boundaries, the secondary literature highlights a growing institutional reliance on the Pentahelix model, which coordinates actions across

academia, business, community, government, and media sectors. In the Bromo gateway, ecological and operational shocks continually threaten the long-term sustainability of the village tourism sector. Documentary synthesis shows that mitigating these vulnerabilities requires developing digital village frameworks (desa digital) that serve as infrastructure to empower local Pentahelix alliances (Susenohaji et al., 2026). By utilizing digital tracking systems and decentralized communication applications, local community networks can dynamically bypass macro-level bureaucratic delays. This digital asset deployment allows grassroots actors to rapidly coordinate local fire surveillance, map carrying-capacity violations, and distribute real-time safety data across decentralized hospitality networks during active disruptions.

When formal state institutions fail to enforce environmental protection mandates over vast national park terrains, this decentralized, digitally enabled Pentahelix framework fills the operational void, safeguarding local community livelihoods and protecting the material landscape from catastrophic degradation.

Micro-level Behavioral Preparedness and Local Actor Fractures

The final critical insight from the comparative institutional analysis is a persistent, systemic disconnect between macro-level disaster directives and the micro-level behavioral preparedness of front-line tourism operators. The secondary empirical literature establishes that the most advanced early warning systems and integrated environmental policies remain ineffective if local human capital fails to internalize disaster preparedness protocols. This behavioral fracture is well documented across both case regions but shows distinct dynamics depending on local network structure.

In the villages directly surrounding Mount Merapi's high-risk slopes, empirical data indicate that, despite decades of exposure to active geological threats, local tourist village managers' disaster preparedness behavior is often low (Wijaya et al., 2025). A phenomenological synthesis of the secondary literature reveals that this low preparedness is governed by a complex matrix of predisposing, enabling, and reinforcing factors. Local managers often normalize active volcanic threats because of generational attachment, while lacking the formal training, financial resources, and institutional incentives (enabling factors) needed to maintain operational readiness plans (Wijaya et al., 2025). Consequently, a dangerous structural decoupling occurs: while macro-level regional policies project an image of rigid disaster preparedness, front-line managers of tourist villages operate without actionable emergency coordination models.

This behavioral gap becomes fatal during mixed anthropogenic-environmental crises, such as the Bromo forest fires, where the lack of active behavioral enforcement and micro-level visitor surveillance among local community guides allows minor tourist negligence to escalate into a full-scale regional disaster (Suhardono, Fitria, et al., 2024). Ultimately, the secondary case records show that strategic crisis governance cannot be achieved through drafting policy white papers or legal directives alone. Unless institutional frameworks actively target and resource the behavioral preparedness of micro-level local actors, the entire strategic crisis governance network remains highly fragile, accelerating the subsequent collapse of destination credibility when a crisis disrupts the ecosystem.

Reputation Dynamics and Risk Communication Efficacy

Consumer cognitive and perceptual lenses heavily mediate the translation of structural crisis governance configurations into sustainable market recovery. This subsection examines the structural pathways through which destination reputation fluctuates, stabilizes, and recovers following acute volcanic or anthropogenic disruptions, using a comprehensive meta-synthesis of published empirical datasets. The secondary literature indicates that a destination's survival in the international arena depends not only on physical safety metrics but also on the strategic

deployment of institutional communication mechanisms to protect and rebuild reputational capital.

Path Analytics of Destination Image and Credibility Recovery

Empirical validation of destination reputation dynamics post-crisis requires a nuanced structural approach that goes beyond basic descriptive tracking of tourist arrivals. A meta-synthesis of secondary structural equation models (SEM) mapping tourist behavioral intentions in the Javanese volcanic arcs shows that a crisis triggers multidimensional decay across several latent constructs. When an active geological hazard or an anthropogenic disruption occurs, it inflicts immediate negative shocks on baseline destination awareness and destroys favorable pre-existing destination associations. However, secondary path coefficients indicate that these foundational dimensions do not directly dictate a tourist's ultimate behavior. Instead, the negative impacts of a crisis on future visit intentions are fully and strictly mediated by two high-level psychological constructs: destination image and destination credibility (SUHUD et al., 2024).

The structural interplay among these latent variables reveals an evolutionary pathway. While a crisis introduces severe cognitive dissonance regarding physical safety, the long-term intention of international and domestic travelers to return to a volcanic zone like Mount Bromo remains remarkably resilient if the underlying destination credibility remains intact. Destination credibility serves as an institutional anchor; it reflects tourists' trust in the destination's ability to deliver on its promises of security, infrastructure, and operational reliability (SUHUD et al., 2024).

If structural governance networks fail to maintain baseline credibility during the acute phase of a shock, the destination image decays rapidly and irreversibly, causing path-mediated visit intentions to collapse. Consequently, from an analytical standpoint, destination marketing organizations cannot rehabilitate a post-crisis market through superficial promotional campaigns alone. Reputational recovery is inherently path-dependent, requiring a structural restoration of institutional credibility before any positive shift in destination image or tourist behavioral intentions can be empirically achieved.

Strategic Risk Communication as an Institutional Shield

To interrupt the cascading decay from physical hazard exposure to reputational collapse, Risk Communication functions as the primary strategic instrument within the governance-reputation matrix. In highly volatile landscapes characterized by active volcanic systems like Mount Merapi and Mount Bromo, tourism growth and disaster risk mitigation exist in a state of permanent structural tension (Nurjanah et al., 2026). The secondary literature shows that a destination's crisis response is judged primarily by how transparently and dynamically it communicates this tension to external markets. Strategic risk communication operates as a psychological shield, active during both acute eruptive phases and prolonged post-crisis recovery periods.

Empirical analysis of published communication strategies shows that standard public relations frameworks are structurally inadequate for managing volcanic crises. Effective risk communication must function as an integrated institutional mechanism that actively translates complex, technical vulcanological and meteorological datasets into clear, actionable safety protocols for international media and potential travelers (Nurjanah et al., 2026). When regional tourism authorities communicate risk transparently and in real time, they reduce external hazard anxieties and decouple the volcano's objective physical reality from exaggerated, alarmist media narratives.

By clearly demarcating active hazard zones from unaffected operational areas, strategic communication prevents the structural generalization of risk, protecting the broader region's baseline destination credibility. Conversely, any attempt to obscure or misreport hazard metrics severely damages public trust, accelerating reputational decay and extending the destination's economic recovery timeline well beyond the physical threat's subsidence.

Safeguarding Localized Hospitality Operations

The final layer of destination reputation dynamics operates at the micro-level of the tourism ecosystem, where individual tourist stay decisions are made within localized hospitality sectors. While macro-level risk communication protects regional destination image, converting visit intentions into physical economic transactions depends heavily on the perceived safety and environmental comfort provided by front-line hospitality operators. Secondary empirical metrics indicate that during periods of active or post-crisis disruption, a tourist's decision to remain in or abandon a destination is directly anchored in operational quality, structural facilities, and localized land management frameworks implemented by decentralized homestay networks (Guspul et al., 2025; Zaim et al., 2025).

When an active volcano disrupts traditional regional infrastructures, decentralized hospitality structures—such as rural homestay networks in Java and Sumatra—absorb the immediate burden of visitor care. The secondary data indicate that if these localized operators maintain high standards of environmental comfort and implement proactive land management, they create a protective micro-buffer that satisfies the tourist's immediate safety and psychological needs, thereby sustaining positive stay decisions despite the broader regional crisis (Guspul et al., 2025; Zaim et al., 2025).

This grassroots resilience is further strengthened when formal, private corporate hospitality entities actively align their internal operations with macro-sustainability mandates. By internalizing green human resource management (Green HRM) practices, corporate hotels systematically reduce environmental burdens and build a workforce capable of maintaining strict safety and sustainability protocols during active crises (Atmoko et al., 2026). By linking formal green corporate practices with decentralized community land management, the destination's hospitality sector presents a unified, highly competent operational front. This micro-level alignment provides a vital foundation for macro-reputation, showing the international market that the destination is structurally prepared to manage volatile risks at every level of the visitor experience.

Theoretical Integration of Resiliency Buffers

The final dimension of the Governance-Reputation Matrix examines the anomalous socio-psychographic and socio-cultural mechanisms that act as critical resilience buffers for active volcanic destinations. Traditional crisis management models often assume a linear relationship in which increased natural hazard exposure automatically results in total market abandonment. However, a critical realist synthesis of the secondary data reveals a highly complex counter-narrative. When an active volcanic destination experiences a crisis, its survival and subsequent reputational recovery are heavily moderated by two powerful, non-traditional forces: the demand-side psychographics of risk-tolerant travelers and the supply-side social capital of the host community. These buffers effectively absorb systemic shocks, preventing permanent abandonment of destinations and providing an operational cushion while formal governance structures stabilize.

Thanatourism Psychographics and Risk-Tolerant Travel Demands

On the demand side, the analytical framework demonstrates that acute or recurring exposure to natural hazards does not uniformly eliminate travel motivation; instead, it fundamentally alters the psychographic profile of the visitor market. Synthesis of the secondary case literature indicates that highly volatile, disaster-prone environments can paradoxically be commodified as viable, specialized business propositions targeting specific customer segments that actively patronize risk-laden landscapes (Tripathy et al., 2026). This resilient demand pattern is theoretically grounded in Edgework theory, Zuckerman's Sensation Seeking Scale, and Arnett's

Inventory of Sensation Seeking, which explain the behavioral motivations of an expanding demographic of thrill-seeking, adventure-driven travelers (Tripathy et al., 2026).

Within the context of Indonesian volcanic arcs, such as Mount Bromo and Mount Merapi, these risk-tolerant segments view the active hazard not as a deterrent, but as a core component of the destination's unique travel allure. When formal risk communication channels transparently manage and broadcast real-time volcanic activity metrics, they inadvertently signal a highly managed, scientifically monitored hazard landscape. This improved forecasting and disaster-management capability makes visiting an active volcanic zone highly viable and intensely attractive to adventure tourists and practitioners of thanatourism (dark tourism) (Tripathy et al., 2026).

Consequently, during the prolonged recovery phase following an eruption or a severe anthropogenic disruption, these specialized visitor flows provide a vital economic baseline. Their active presence prevents complete economic stagnation, sustains local livelihoods, and maintains baseline destination awareness in international travel networks. However, secondary records emphasize that this psychographic resilience can be sustained only through seamless cooperation and operational willingness among key stakeholders—specifically tourists, local service providers, and regional government agencies (Tripathy et al., 2026). Without this collaborative alignment, tourists' voluntary exposure to risk can quickly become an unmanaged safety crisis, destroying the destination's delicate reputational equilibrium.

Traditional Ecological Wisdom as a Socio-Cultural Absorber

On the supply side, the primary institutional buffer that shields a destination's reputational capital from structural decay is deeply rooted in the host community's internal social fabric and cultural narratives. A meta-synthesis of published ethnographic and qualitative datasets across the Javanese highlands—such as the Dieng Plateau and active volcanic rings—demonstrates that long-term resilience is reinforced by the survival of deep-seated ecological wisdom, folklore, and sacred ecologies embedded within indigenous heritage (Schlacher et al., 2025). These traditional narratives and symbolic roles are not mere historical artifacts; they function as active cognitive frameworks that transmit practical environmental knowledge, regulate human-nature co-existence, and shape how local communities psychologically process acute geological disruptions (Schlacher et al., 2025).

By framing intense volcanic eruptions or environmental changes as sacred, regenerative, and culturally coherent cycles of the earth rather than arbitrary, catastrophic failures, this traditional ecological wisdom instills a profound sense of psychological endurance within the host population. This localized cultural anchor prevents widespread social panic, fosters immediate grassroots solidarity, and projects a powerful external narrative of stability to the outside world. This socio-spiritual composure directly counters the alarmist, sensationalized coverage frequently propagated by external media networks, thereby buffering the destination's international reputation from rapid decay.

Furthermore, this socio-cultural buffer is operationally activated when traditional ecological wisdom is integrated with decentralized, micro-level hospitality practices. Secondary empirical metrics confirm that during active periods of hazard exposure, a tourist's stay decision depends heavily on environmental comfort, structural facilities, and proactive rural land management executed by local homestay operators (Guspul et al., 2025; Zaim et al., 2025). When centralized bureaucratic frameworks experience operational delays, these community-managed hospitality networks rely on their internalized cultural and operational capital to maintain baseline safety standards and provide a secure, comforting environment for remaining travelers.

This grassroots resilience is further amplified when community networks leverage digital village architectures to rapidly coordinate local safety measures, bypass administrative fractures, and distribute factual, localized risk data from the bottom up (Susenohaji et al., 2026; Wijaya et

al., 2025). Ultimately, the Governance-Reputation Matrix synthesis shows that a volcanic destination's post-crisis survival is not solely determined by macro-level government intervention or aggressive public relations campaigns. Instead, the enduring reputational integrity of a high-risk zone is continuously maintained by the alignment between the psychographic demands of risk-tolerant travelers and the deep socio-ecological resilience of local community actors.

Discussion

The comparative empirical findings from the dual documentary streams of Mount Merapi and Mount Bromo transcend descriptive case analysis and require a high-level theoretical dialogue with extant tourism crisis management models. Traditional disaster frameworks in pariwisata literature largely operate on a linear assumption: an exogenous physical shock disrupts a destination, leading to an immediate drop in tourist volume, which is then remediated through post-crisis promotional marketing campaigns. However, the cross-case meta-synthesis executed in this study exposes the structural limitations of such linear paradigms. By adopting a critical realist lens, this discussion synthesizes the empirical realities of Indonesian volcanic arcs to construct a multi-layered, non-linear explanatory framework. This synthesis culminates in Figure 2, which captures the conceptual essence and core theoretical contribution of this study.

The Structural Filtration Capacity of Strategic Crisis Governance

The first major insight from this general discussion is that a physical hazard does not directly dictate reputational decay; rather, its material impact is actively filtered, mitigated, or amplified by the structural configuration of Strategic Crisis Governance. When a volcanic crisis erupts, triggering legal paralysis and contractual impossibility under force majeure (Admiral et al., 2025), macro-level bureaucratic structures are often overwhelmed. The meta-synthesis demonstrates that the pace of destination rehabilitation depends on an integrated model of climate and hazard governance that effectively engages multi-stakeholder networks before acute hazard exposure (Suryawan et al., 2026). As the Bromo case record shows, when macro-governmental containment fails across vast areas, decentralized Pentahelix networks supported by digital village infrastructures (*desa digital*) serve as a vital structural mechanism to bypass administrative inertia and rapidly mobilize local safety resources (Susenohaji et al., 2026).

Conversely, as the Merapi case dockets show, a dangerous structural decoupling occurs when macro-regional hazard policies are highly sophisticated, but micro-level behavioral preparedness among front-line tourist village managers remains misaligned or under-resourced (Wijaya et al., 2025). This behavioral fracture breaks the destination's initial filtration capacity. When community-level actors fail to internalize safety surveillance and risk management, minor tourist indiscretions can transform into catastrophic human-induced environmental disasters, as seen in the high-magnitude Bromo fire incident (Salehi et al., 2025; Suhardono, Fitria, et al., 2024). Strategic crisis governance must therefore be conceptualized as an unbroken nomological net: a tight coupling between macro-level integrated environmental policy and micro-level behavioral preparedness, operating through digitally enabled Pentahelix channels to filter the objective materiality of the hazard.

The Path-Mediated Nomological Net of Reputation Dynamics

The second core theoretical contribution of this discussion delineates the internal path-dependent mechanics of Reputation Dynamics post-crisis. Marketing-centric tourism studies often treat destination image as a superficial construct that can be easily manipulated via public relations messaging. In contrast, our synthesized empirical matrix confirms that a natural or anthropogenic disaster triggers a systemic, cascading erosion across a network of latent perceptual constructs. While physical asset destruction immediately damages baseline destination awareness and pre-existing brand associations, the ultimate path toward tourist

market rejection or retention is strictly and fully mediated by destination image and destination credibility (SUHUD et al., 2024). Destination credibility acts as the framework's psychological gatekeeper. If the strategic crisis governance filter is robust, it protects institutional credibility, thereby buffering the destination image from catastrophic decay. This institutional shield is activated through transparent, dynamic risk communication frameworks that bridge technical vulcanological realities with external international market perceptions (Nurjanah et al., 2026).

Furthermore, this macro-credibility is structurally reinforced from the bottom up by the material performance of localized hospitality ecosystems. The meta-synthesis shows that during active disruptions, individual tourist stay decisions and perceived security are directly anchored in the micro-level environmental comfort and proactive rural land management maintained by decentralized homestay networks (Guspul et al., 2025; Zaim et al., 2025). When these community homestays provide an authentic, secure micro-environment and are supported by private corporate hospitality entities that internalize green human resource management (Green HRM) practices to ensure operational continuity (Atmoko et al., 2026), they collectively stabilize the destination's broader reputational capital. Reputation dynamics are thus validated as a highly structured, path-mediated outcome, entirely driven by the perceived integrity of the governance filter.

The Structural Buffering Mechanics of Resilience

The final, and most crucial, theoretical revelation of this study explains the anomaly of destination resilience—specifically, why active volcanic zones in Indonesia consistently resist permanent market abandonment despite severe hazard exposure. The general discussion identifies two powerful, non-traditional Resiliency Buffers that moderate the pathway between governance failures and reputational collapse, acting as socio-psychological and socio-cultural shock absorbers. On the demand side, the Thanatourism Psychographic Buffer challenges the conventional assumption that natural hazards eliminate travel motivation. Grounded in Edgework theory and sensation-seeking behavioral scales, the framework demonstrates that a volatile volcanic hazard alters the market's psychographic composition. Highly resilient destinations can successfully commodify hazard narratives to unlock alternative dark tourism and thanatourism demands among risk-tolerant, thrill-seeking segments who view active hazard monitoring as a viable travel proposition (Tripathy et al., 2026).

On the supply side, the Socio-Cultural Absorber Buffer shields the destination from permanent social and reputational collapse from within. Deep-seated ecological wisdom, folklore, and sacred ecologies embedded in indigenous Javanese heritage serve as vital cognitive maps that regulate human-nature relationships during extreme geological events (Schlacher et al., 2025). By framing volcanic eruptions as natural, regenerative cycles rather than systemic governance failures, this ecological wisdom maintains social calm, prevents local panic, and projects an external narrative of spiritual and structural endurance that defuses alarmist reporting in external media channels. When integrated with community-led digital village networks, these twin buffers absorb the immediate shock of a crisis, giving the destination the operational time needed to restore its formal governance filters.

By synthesizing these interconnected pathways, this study constructs a holistic, comprehensive conceptual model. Figure 2 systematically visualizes the structural interactions, mediating vectors, and moderating forces that define this nomological network.

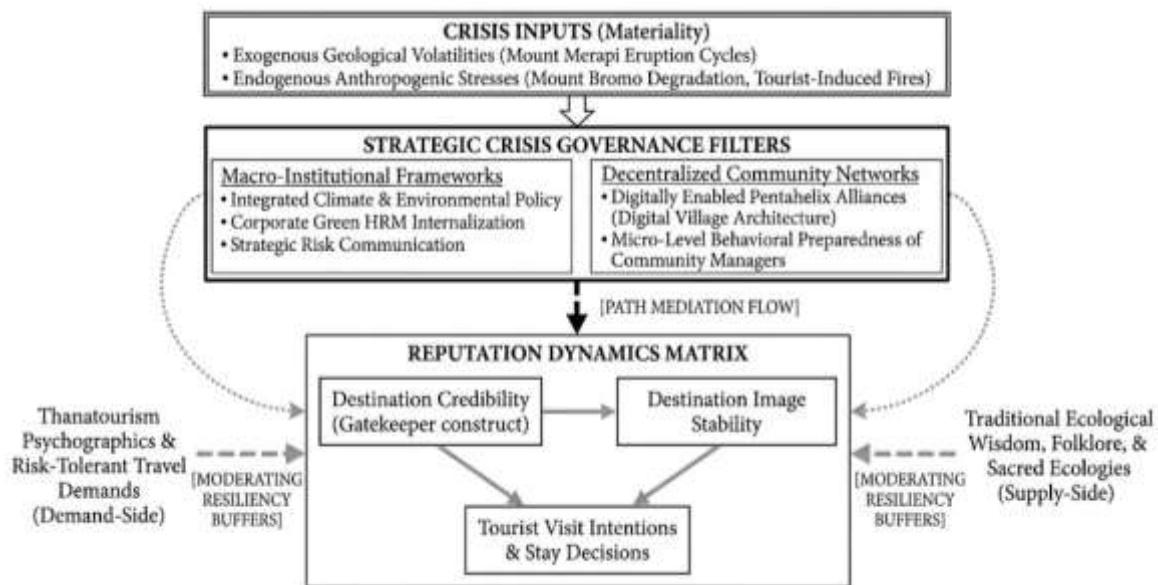


Figure 2. The Strategic Governance-Reputation Framework in a Volcanic Tourism Destination
Source: Research data, 2026

Theoretical Contributions

The theoretical alignment structured within the conceptual framework maps a comprehensive nomological network that advances contemporary pariwisata literature. This study provides a distinct theoretical contribution by dismantling the conventional, linear assumptions that dominate traditional disaster management models. Extant hospitality literature largely views natural hazard exposure as a direct, negative predictor of visitor volume that reactive post-crisis marketing must counter. By contrast, this research introduces an integrated, non-linear perspective grounded in critical realism, demonstrating that physical crisis materiality does not directly dictate reputation decay. Instead, a shock's material reality is actively processed through a multi-layered governance apparatus. This framework expands the boundaries of the Pentahelix model by showing how macro-institutional policies and decentralized community networks—when tightly coupled via digital village infrastructures—act as an institutional filter that directly regulates the transmission of environmental and geological shocks into public perception.

Furthermore, this study advances the structural understanding of post-crisis destination branding by delineating the internal path-dependent mechanics of reputation dynamics. Rather than treating destination image as a superficial marketing variable that public relations campaigns alone can rehabilitate, the synthesized framework shows that reputational recovery is deeply path-dependent. The theoretical pathway established here confirms that a crisis triggers a cascading decay across multiple perceptual dimensions, yet the destination's underlying institutional credibility strictly and fully mediates future visitor behavior. This research highlights destination credibility as the primary psychological gatekeeper that shields the destination image from catastrophic collapse. This institutional shield is operationally activated through strategic risk communication frameworks and structurally reinforced from the bottom up by the material performance and environmental comfort provided by decentralized, community-managed hospitality systems.

Finally, this study introduces a novel theoretical re-conceptualization of destination resilience by identifying powerful, non-traditional buffers that moderate the pathway between governance failures and reputational decay. On the demand side, this research challenges the standard economic assumption of risk aversion by demonstrating that active volcanic hazards can alter the psychographic composition of the visitor market. Grounded in Edgework theory, the framework

shows how highly volatile terrains can commodify hazard narratives to unlock alternative dark tourism and thanatourism demand among risk-tolerant, thrill-seeking traveler segments. On the supply side, the framework shows that the primary internal shock absorber protecting a destination's reputational capital is the host community's socio-cultural fabric. Deep-seated ecological wisdom, localized folklore, and sacred ecologies act as active cognitive frameworks that regulate human-nature relationships during catastrophic disruptions. By framing volcanic activity as a natural, regenerative cycle rather than an administrative collapse, this ecological wisdom maintains social calm and projects an external narrative of spiritual and structural endurance that completely defuses alarmist media coverage.

Managerial Implications

From a managerial perspective, the empirical synthesis offers critical insights for regional disaster management agencies, tourism ministries, and destination marketing organizations navigating high-risk landscapes. Otoritas pariwisata must move away from ad hoc emergency responses and instead focus on institutionalizing integrated climate and environmental governance policy well ahead of active hazard exposure. The stark contrast between the case profiles shows that administrators must accurately diagnose whether a destination faces an exogenous geological shock or an endogenous anthropogenic failure. For exogenous volcanic threats, managerial systems must prioritize rapid evacuation, rigid safety zoning, and macro-regional risk communication. For endogenous, mixed crises—such as tourist-induced forest fires—management architectures must center on strict carrying-capacity enforcement, continuous environmental surveillance, and the active regulation of tourist behaviors within fragile conservation zones.

Additionally, destination managers must invest heavily in human capital development to bridge the persistent disconnect between macro-level disaster directives and the micro-level behavioral preparedness of front-line operators. Regional frameworks fail if front-line community managers and local guides do not behaviorally internalize safety protocols because of normalized hazard exposure or a lack of formal institutional incentives. Otoritas pariwisata should use digital village frameworks to empower decentralized Pentahelix alliances, enabling grassroots actors to quickly coordinate local safety measures, map environmental violations, and share factual risk data during active disruptions. Furthermore, by providing technical training and financial resources to decentralized homestay networks, administrators can ensure that the micro-level hospitality sector maintains high environmental comfort and proactive land management during volatile periods. This micro-level competence provides an authentic, secure environment for remaining travelers, thereby structurally reinforcing the destination's broader reputational capital and accelerating its long-term recovery velocity in the international arena.

CONCLUSION

This study has systematically investigated the complex structural relationships between institutional crisis responses and consumer market perceptions within volatile environments by developing and empirically testing the Strategic Governance-Reputation Dynamics Framework. Through a comparative qualitative desk synthesis of secondary data from two major volcanic tourism destinations in Indonesia—Mount Merapi and Mount Bromo—this research shows that natural hazard exposure does not lead to linear destination brand abandonment. Instead, the critical realist analysis proves that physical crisis materiality is filtered through a multi-layered governance apparatus, where macro-institutional frameworks must tightly couple with decentralized community capability to prevent widespread reputational decay. While Mount Merapi represents an exogenous geological shock requiring rigid structural containment and formal administrative directives, Mount Bromo highlights an endogenous, mixed crisis typology

where creeping environmental degradation and tourist negligence demand collaborative behavioral control. Ultimately, this research confirms that post-crisis destination resilience is path-dependent, relying heavily on preserving destination credibility as a psychological gatekeeper, while being cushioned by non-traditional resiliency buffers such as specialized thanatourism demands and deep-seated local ecological wisdom.

Limitations and Future Research Trajectories

While this study offers significant theoretical and empirical insights, it must acknowledge specific structural limitations to guide future scholarly inquiry. First, because this research relied entirely on a qualitative desk study approach synthesizing secondary documentary streams between 2024 and 2026, the framework lacks primary, real-time longitudinal tracking of changing tourist emotions and behavioral changes during acute emergency phases. Future research should deploy real-time structural equation modeling and big-data sentiment analysis across diverse digital platforms to capture fluctuating reputation dynamics as they unfold. Second, the empirical scope was limited to two distinct volcanic landscapes in Indonesia, which limits the framework's immediate generalizability to other geographical settings or disaster typologies. Future studies should test the scalability of the Strategic Governance-Reputation Dynamics Framework by executing cross-national comparative evaluations across other highly active volcanic archipelagos, such as Japan, the Philippines, or Iceland. Finally, while this research identified alternative dark tourism demands and localized ecological wisdom as powerful moderating buffers, the precise economic thresholds and ethical boundaries governing the commodification of active hazard landscapes remain unmapped, highlighting a critical trajectory for future sustainable pariwisata research.

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