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Stakeholder Collaboration in Revitalising Peneleh Heritage Tourism Area in Surabaya: A Pentahelix Perspective

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Abstract

This study investigates the dynamics of multi-stakeholder collaboration in the revitalisation of the Peneleh heritage tourism area in Surabaya, Indonesia, addressing a notable research gap concerning the empirical application of collaborative governance models—particularly the pentahelix framework within the context of urban heritage tourism. Adopting a qualitative case study design suited for exploring complex stakeholder interactions, the research draws upon in-depth interviews, document analysis, and field observations to construct a comprehensive understanding of the collaborative process. Thematic analysis reveals six interrelated dimensions of collaboration: idea co-creation, participatory decision-making, capacity building, joint implementation, sustainability efforts, and tangible revitalisation outcomes. The findings suggest that collaborative engagement not only facilitated the physical restoration of heritage assets but also reinforced socio-cultural identity and stimulated local economic vitality through community-driven microenterprises. Theoretically, this study contributes to refining the pentahelix model by elucidating the evolving and strategic roles of the business sector, media, and community actors in fostering public engagement, mobilising resources, and enhancing market access—dimensions often underemphasised in existing frameworks. Practically, it underscores the necessity of inclusive governance structures, continuous multi-channel communication, and shared resource mechanisms to ensure the sustainability of urban heritage regeneration. The insights generated offer actionable guidance to policymakers and practitioners developing participatory models to revitalise culturally significant urban areas.

Keywords: Tourism Development, Collaborative Governance, Pentahelix Model, Sustainable Heritage Management, Community Empowerment

INTRODUCTION

Urban heritage areas in rapidly developing cities are increasingly threatened by physical deterioration, functional obsolescence, and the erosion of cultural identity (Al-Ansi et al., 2023; Harun et al., 2025). In response, heritage revitalisation has emerged as a critical strategy to restore the social, cultural, and economic vitality of historic districts while safeguarding their legacies for future generations (Ying et al., 2024; Zhang & Ren, 2025). However, many revitalisation efforts fall short of achieving long-term impact due to fragmented planning approaches, hierarchical governance structures, and the marginalisation of key stakeholder voices. These limitations have spurred growing interest in collaborative governance models that emphasise multi-actor engagement and participatory planning, particularly within the domain of heritage tourism (Basyar et al., 2025).

Among the various models proposed, the pentahelix framework has gained traction in the Indonesian policy landscape as a vehicle for integrating five core stakeholder groups: government, academia, business, media, and community (Koby, 2025; Nugroho & Lestari, 2023). The model promotes inclusive planning, cross-sectoral synergy, and shared accountability in tourism and urban development initiatives. Within the heritage context, such a framework holds the

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potential to foster locally grounded interventions and enable the co-production of culturally resonant heritage values

While the existing literature has explored stakeholder collaboration in tourism and urban governance, empirical examinations of the pentahelix model's application to heritage revitalisation remain limited. Prior studies tend to focus on physical conservation or tourism development planning, often portraying stakeholders' roles as static and predominantly top-down (Rachmawati & Fountain, 2020). Moreover, little is known about how collaborative arrangements evolve, particularly in the transition from planning to implementation and long-term sustainability. This gap includes a limited understanding of how stakeholder coordination, community empowerment, and resource integration adapt to the shifting demands of revitalisation.

To address these gaps, this study investigates how stakeholder collaboration shaped the revitalisation of the Peneleh heritage tourism area in Surabaya, Indonesia, through the lens of the pentahelix framework. Peneleh is one of the city's most historically significant districts—recognised as the birthplace of Indonesia's first president, Soekarno—and features a diverse collection of colonial and vernacular heritage assets (Mahayani et al., 2022). In recent years, the district has undergone a revitalisation program initiated by the local government and supported by academic institutions, financial actors, media platforms, and grassroots community organisations. This initiative extends beyond physical restoration, aiming to reinvigorate the district's cultural fabric and stimulate community-based economic development.

Despite the increasing policy emphasis on the pentahelix model (Koby, 2025; Permadi et al., 2021; Wahyuni & Wahono, 2025), there remains a paucity of empirical evidence on how collaboration among these five stakeholder groups operates in practice, particularly within the dynamic context of heritage revitalisation. Moreover, the evolving roles of business actors, media institutions, and local communities have received insufficient analytical attention. By focusing on the Peneleh case, this study offers a grounded perspective on the everyday processes of stakeholder negotiation, co-creation, and decision-making that underpin collaborative urban heritage governance.

Guided by this empirical and theoretical lacuna, the study is structured around two central research questions: (1) How do pentahelix stakeholders collaborate during the planning and implementation phases of the Peneleh heritage revitalisation initiative? Moreover, (2) What physical, socio-cultural, and economic outcomes result from these collaborative processes? Through addressing these questions, the study aims to advance the theoretical discourse on collaborative governance in heritage tourism by refining the pentahelix model to reflect the fluid and strategic roles of non-governmental actors. Furthermore, the study contributes practical insights for designing inclusive, resilient, and community-anchored approaches to urban heritage revitalisation.

LITERATURE REVIEW

Stakeholder Involvement in Heritage Tourism

Heritage tourism has become a pivotal mechanism for preserving cultural identity and fostering local economic development, particularly in rapidly urbanising contexts (Cerisola & Panzera, 2025; Galluccio & Giambona, 2024). However, revitalising historic urban spaces entails more than restoring physical structures. It necessitates navigating complex constellations of stakeholder interests, power relations, and identity politics (Liu et al., 2022). Recognising these intricacies, recent scholarship has underscored the critical importance of stakeholder engagement as a foundational condition for achieving sustainable and inclusive heritage tourism (Wu et al., 2025).

Initial conceptualisations of stakeholder collaboration in tourism tended to emphasise formal actors, such as government agencies and private enterprises. However, more recent studies have highlighted the indispensable roles of residents, cultural communities, and civil society organisations (Kartimin et al., 2023; Kinasih et al., 2025; Mekonnen et al., 2022). These contributions demonstrate that meaningful community involvement enhances planning legitimacy, fosters public ownership, and ensures alignment with local cultural values. Moreover, participatory frameworks have been found to facilitate the preservation of intangible heritage dimensions often overlooked in top-down approaches.

Despite these advances, stakeholder collaboration in heritage tourism remains uneven and fragmented in practice (Basyar et al., 2025). Empirical studies continue to identify recurrent challenges, including asymmetric power relations, low levels of trust, and ineffective communication among stakeholders (Aas et al., 2005; Li et al., 2020). Decision-making processes are frequently dominated by public authorities or external consultants, marginalising community voices and risking the commodification of heritage at the expense of local authenticity (Lyu et al., 2024).

A further conceptual limitation lies in the static classification of stakeholder roles within both academic and policy discourses. Actors are often framed within fixed functional typologies—such as funders, planners, or beneficiaries—neglecting the evolving, negotiated, and relational nature of their participation (Lei et al., 2025). In reality, stakeholder engagement in urban governance is a dynamic process characterised by ongoing learning, adaptation, and negotiation (Nag & Mishra, 2023). This insight is particularly salient in heritage revitalisation, which demands sustained cross-sectoral commitment over extended periods.

In the Indonesian context, empirical research examining the lived dynamics of stakeholder collaboration across the different stages of heritage revitalisation—namely, planning, implementation, and post-revitalisation maintenance—is still limited. While many studies discuss participation frameworks in abstract terms, few provide granular analyses of how collaboration unfolds in situ (Ramadhani & Nuraini, 2024; Sentanu et al., 2025). These gaps underscore the need for context-sensitive research that traces the actual processes through which stakeholders co-produce heritage outcomes. This study addresses these gaps by offering an indepth case study of the Peneleh heritage revitalisation initiative in Surabaya. It seeks to illuminate the operational dynamics of stakeholder collaboration at multiple stages and to examine the material, sociocultural, and economic outcomes arising from such partnerships.

The Pentahelix Collaboration Model

The pentahelix model (see Figure 1) has emerged as a widely cited framework—particularly in the Indonesian development context—for conceptualising complex multi-stakeholder collaboration. Evolving from the triple helix model (Etzkowitz & Leydesdorff, 1995), which emphasised institutional linkages among government, academia, and industry, the pentahelix framework incorporates two additional actors: media and the community. This expansion reflects a more holistic vision of participatory governance that foregrounds knowledge co-production, public legitimacy, and social mobilisation (Ramadhanti et al., 2024).



Figure 1. The Pentahelix Collaboration Model

Source: Sudiana et al., 2020

In heritage and tourism development contexts, the pentahelix model offers a normative structure for delineating the roles of diverse actors: governments provide policy direction and regulatory mechanisms; academia supplies research and analytical input; businesses contribute capital and innovation; media disseminates narratives and shapes public discourse; and communities act as cultural stewards and co-creators of heritage experiences (Ramadhanti et al., 2024). Despite its policy prominence, the pentahelix framework remains underdeveloped as a theoretical construct, particularly in comparison to other collaborative governance models. The triple helix framework emphasises institutional innovation and economic outcomes (Etzkowitz & Zhou, 2017), while the quadruple helix adds civil society to address democratic legitimacy and societal needs (Nordberg et al., 2020). However, neither model fully recognises the distinct role of media in shaping public perception and enabling mass participation—an omission the pentahelix model addresses.

Similarly, while collaborative governance theory (Ansell & Gash, 2008) provides valuable insights into negotiation processes and institutional coordination, it lacks clear criteria for actor inclusion or communication channels. In contrast, the pentahelix model explicitly incorporates media and community actors as autonomous agents in agenda-setting, knowledge-sharing, and stakeholder alignment (Azwar et al., 2025; Liebal et al., 2025; Subair et al., 2025). These characteristics are particularly relevant to the governance of cultural heritage, where symbolic meaning, collective memory, and public legitimacy are central. To clarify

the comparative advantages of each framework, Table 1 presents a conceptual comparison of collaboration models relevant to heritage tourism.

Table 1. Conceptual Comparison of Collaboration Models in Heritage Tourism

Core Actors	Governance Focus / Mechanism	Relevance to Heritage Tourism	
Government, Academia,	Innovation through institutional	Helpful in leveraging expertise and resources,	
Business	collaboration; alignment of policy,	but often lacks mechanisms for cultural	
	research, and investment agendas legitimacy or local voice		
Government, Academia,	Co-creation, public engagement, and	Highly relevant due to explicit inclusion of media	
Business, Media,	resource mobilisation across five	and community, fostering both cultural	
Community	stakeholder groups	resonance and policy coordination	
Public + Private	Consensus-building, negotiation, and	Valuable for understanding power dynamics and	
Stakeholders	shared decision-making over time	adaptability, but less precise in role definition	
		and communication flow	

Source: Ardi & Suswanta, 2025; Sadat & Nastia, 2023; Wahida et al., 2020

Several empirical studies have attested to the utility of the pentahelix model in facilitating collaborative innovation and inclusive planning in tourism development (Sumarna, Geohansa, & Mulyaningsih, 2025; Sumarna, Geohansa, Kania, et al., 2025). Nevertheless, its practical application in heritage revitalisation remains underexamined. While Indonesian policy frameworks increasingly invoke pentahelix principles, there is limited empirical inquiry into how stakeholder collaboration is operationalised, particularly beyond the initial planning stages. Challenges frequently arise in aligning the motivations and capacities of diverse actors, managing inter-sectoral tensions, and maintaining collaboration beyond project completion. In many cases, community organisations lack institutional support or technical capacity, media engagement is episodic, and private-sector involvement remains confined to short-term corporate social responsibility (CSR) activities (Wahyuni & Wahono, 2025). In light of these limitations, the present study seeks to advance the theoretical foundations of the pentahelix model by examining both the formalised and emergent dimensions of collaboration. It investigates how institutional structures, informal networks, and relational trust interact to shape heritage outcomes. By analysing the Peneleh revitalisation through a process-oriented lens, the study contributes to a more grounded, context-sensitive understanding of collaborative governance in urban heritage development.

METHODS

This study employed a qualitative case study approach to explore the dynamics of stakeholder collaboration in the revitalisation of the Peneleh heritage tourism area in Surabaya, Indonesia. The case study design was chosen due to its capacity to facilitate in-depth, contextually grounded analysis of contemporary phenomena, particularly when the boundaries between the phenomenon and its real-world context are fluid and complex (Yin, 2018). Given the multifaceted nature of the revitalisation process—which involved diverse actors, layered interactions, and overlapping interests—an embedded single-case design was deemed most appropriate for capturing the intricacies of stakeholder relationships and their influence on heritage-driven urban transformation. In line with (Yin, 2018) principle of employing multiple sources of evidence, this study integrated three primary data collection methods: semi-structured in-depth interviews, direct observation, and document analysis. This multi-method strategy enabled robust triangulation and enriched the empirical basis for examining the procedural and experiential dimensions of collaborative revitalisation.

Fieldwork was conducted between April and July 2024. Thirteen key informants were purposively selected to reflect the five core components of the pentahelix model: government, business sector, academia, media, and community. Government stakeholders included officials from the Surabaya City Department of Tourism, the Regional Development Planning Agency (Bappeda-Litbang), the Department of Housing and Settlements, the Environmental Agency, and the Department of Transportation. Academic representation was provided by a lecturer from the University of Surabaya, who also served on the Cultural Heritage Expert Team. The business sector was represented by a senior official from Bank Indonesia Surabaya, who has actively supported local tourism-related MSMEs. The media was represented by the head of public relations at Radio Republik Indonesia (RRI) Surabaya. Community perspectives were drawn from members of Pokdarwis and Begandring Soerabaia, including leadership and grassroots actors directly involved in heritage tourism development in Peneleh.

All interviews were conducted face-to-face, lasting between 45 and 90 minutes each. An interview guide was used to explore the informants' roles in the revitalisation process, perceptions of inter-stakeholder collaboration, challenges encountered, and evaluations of program outcomes. With participants' informed consent, all interviews were audio-recorded, transcribed verbatim, and anonymised to ensure confidentiality.

In addition to interviews, the researcher conducted direct observation of heritage-related events—such as the 2024 Peneleh Festival, community-led heritage walks, and public exhibitions—held in the revitalisation area. Observational data were systematically recorded in field notes and later integrated into the coding process. Document analysis complemented primary data by offering contextual and institutional insights. The reviewed materials included municipal revitalisation plans, cultural preservation policies, government reports, media articles, promotional brochures, and relevant social media archives. These documents were used to trace the official discourse surrounding revitalisation and to assess its alignment with stakeholders' narratives and experiences. All visual materials used in the study (Figures 2–6), including archival photographs, were reproduced with explicit permission from Begandring Soerabaia, in compliance with ethical and copyright standards.

Table 2. Sample of Thematic Analysis

Ouote from Informant Sub-Theme Theme				
		Co-Creation of Ideas		
"Sometimes, we (Pokdarwis) give the first ideas like tour routes	Community-generated ideas	Co-Creation of fueas		
or which stories to highlight."		_		
"BI expands (ideas) what we originally planned, especially on how local businesses could benefit."	Cross-sector idea input			
	т.С. 11 1.1.	_		
"Begandring brings in historical details things not found in	Informal knowledge			
official documents."	integration	D		
"We were invited to give input makes us feel like our voice really	Community consultation	Participatory		
matters."		_ Decision-Making		
"Government adjusts the plan after hearing community	Negotiation and			
concerns"	adjustment			
"We got tour guide training so we can explain the history	Tour guide training	Capacity Building		
properly."		_		
"MSMEs received coaching packaging and branding for heritage	MSME empowerment			
products."		_		
"Workshops helped us to be better before we just improvised."	Skills enhancement			
"During festivals, everyone works together government,	Shared execution	Collaborative		
community, media."		Implementation		
"We (RRI) keep covering Peneleh so the momentum does not	Media coverage			
fade."				
"We remind everyone that restored buildings need regular care"	Maintenance efforts	Sustainability &		
"Communities guard the historical meaning not overly	Cultural protection	Preservation		
commercialised."	-			
"The old house looks much better façades repaired, roofs	Physical improvement	Tangible		
fixed"	•	Revitalisation		
"Local businesses benefited visitors buy local products now."	Economic revitalization	Outcomes		
"Young people feel prouder they also helped with many	Strengthened socio-	_		
projects."	cultural identity			
"Cultural events make residents feel more united"	Social cohesion	_		

Source: Research data, 2025

Thematic analysis followed the six-phase procedure outlined by (Braun and Clarke, 2006): familiarisation with the data, generation of initial codes, identification of candidate themes, review and refinement of themes, and final synthesis. Coding was conducted both deductively—guided by the conceptual dimensions of the pentahelix framework—and inductively, to capture emergent insights derived directly from the empirical material. A sample of the coding process is illustrated in Table 2, which shows how raw data were categorised into sub-themes and overarching analytical themes. To ensure data adequacy, saturation was assessed iteratively during data collection and analysis. By the final phase of fieldwork, no new codes or conceptual categories emerged, indicating thematic sufficiency. The inclusion of diverse stakeholder categories (government, business, academia, media, and community) further enriched the data and enabled triangulation of perspectives. Analytical reliability was strengthened through intercoder agreement procedures. Both authors independently coded a subset of transcripts, compared results to resolve discrepancies, refined code definitions collaboratively, and reached consensus on thematic classifications. This iterative process enhanced consistency in interpretation and ensured that the final themes reflected shared analytical rigour.

RESULTS AND DISCUSSION

Co-Creation of Ideas

The revitalisation of the Peneleh heritage area was conceived as a multi-stakeholder initiative grounded in the principles of the pentahelix model. Interviews revealed that the local government acted as the primary initiator, facilitating platforms such as public consultations and thematic forums to surface local issues and stimulate idea generation. These platforms became essential arenas where diverse actors articulated aspirations, identified site-specific challenges, and proposed innovative responses to the decline of Peneleh's historical assets. Academic institutions, particularly the Cultural Heritage Expert Team, played a crucial role in shaping the intellectual foundation of the revitalisation. Their evidence-based recommendations helped identify cultural priorities and develop context-sensitive intervention strategies. Simultaneously, media institutions helped expand public awareness by broadcasting discussions and mobilising support across digital and conventional platforms.

From the business sector, Bank Indonesia provided strategic input through its CSR initiatives, supporting micro-enterprises aligned with heritage tourism. Community groups such as Pokdarwis and Begandring Soerabaia contributed invaluable grassroots insights, ensuring that revitalisation strategies resonated with residents' lived realities. Rather than following a top-down blueprint, idea generation in Peneleh was a distributed, dialogical process. This co-production approach aligns with contemporary scholarship on heritage governance, which treats community-generated knowledge and cultural memory as epistemic resources that enrich technocratic planning (Craps, 2021). The inclusive governance framework facilitated early consensus-building and fostered a sense of joint ownership, which proved instrumental in guiding subsequent project phases (Della Spina, 2025).

Participatory Decision-Making

The decision-making phase of the revitalisation project was marked by a high degree of openness and collective deliberation. Government agencies convened multi-stakeholder forums (Figure 2), allowing representatives from all five pentahelix sectors to engage in meaningful dialogue. Through these processes, stakeholders co-developed spatial plans, prioritised cultural programming, and shaped infrastructure projects.





Figure 2. Multi-stakeholder Meetings

Source: Archive of Begandring Soerabaia

Academic actors provided technical appraisals, supporting the institutionalisation of evidence-informed decision-making. Community delegates expressed preferences regarding accessibility, tourism planning, and the cultural interpretation of heritage spaces. The media played a dual role by both disseminating information and maintaining public accountability. Meanwhile, Bank Indonesia emphasised the long-term economic feasibility of proposed actions. This inclusive structure exemplifies collaborative governance mechanisms that not only broaden legitimacy but also enrich decision-making by incorporating heterogeneous forms of expertise (Ansell & Gash, 2008; Paddison & Biggins, 2017). Importantly, the inclusion of the business sector—beyond CSR tokenism—repositions it as a co-planner in long-term development, thereby expanding the theoretical scope of the pentahelix model (Hendrayani et al., 2025).

Capacity Building

A core pillar of the revitalisation process was the systematic development of local capacities. Government agencies partnered with universities and Bank Indonesia to offer targeted training on heritage tourism competencies. These programs focused on practical skills—such as storytelling, historical interpretation, guiding techniques, and hospitality management—primarily targeted at local youth and Pokdarwis.







Figure 3. Local Guide TrainingSource: Archive of Begandring Soerabaia

Academics provided curriculum design and mentorship, while the media promoted these programs to broader community audiences. The result was the emergence of a new cadre of community-based cultural guides equipped not only with technical proficiency but also a strong connection to local identity and values. This model of skill transmission aligns with studies that underscore capacity building as a precursor to community empowerment and sustainable tourism (Semwal et al., 2024; Shrestha et al., 2025). The holistic integration of cultural, entrepreneurial, and managerial training ensured that revitalisation did not merely produce tourism workers but empowered cultural custodians. Notably, capacity building served as a bridge between planning and sustainability, as many trained actors transitioned into leadership roles during the project's implementation phase.

Collaborative Implementation

Revitalisation activities were implemented through active coordination among pentahelix stakeholders. Government bodies ensured regulatory compliance and facilitated the issuance of restoration permits for sites such as Bung Karno's Birthplace and Langgar Dukur. Academic experts conducted architectural audits and historical surveys to guide authentic restoration.



Figure 4. MSME Kiosks and Heritage Shops

Source: Archive of Begandring Soerabaia

The business sector—particularly Bank Indonesia—invested in heritage-themed MSME infrastructure, including kiosks and souvenir outlets. Community groups organised festivals and heritage walks, while media institutions documented progress, expanded outreach, and sustained public interest. This collaborative implementation illustrates how complementary competencies—policy authority, technical expertise, capital, local knowledge, and communicative legitimacy—can converge to produce multi-dimensional heritage revitalisation. The integration of formal institutions and informal networks exemplifies best practices in heritage governance and aligns with recent findings that sustained partnerships are essential for holistic urban transformation (Sobieraj & Metelski, 2025).

Sustainability and Preservation

Sustainability was not treated as a postscript, but as a guiding principle embedded from the outset. The local government institutionalised stakeholder forums for ongoing governance and allocated resources for long-term maintenance. Academic actors designed monitoring frameworks, while community groups assumed responsibility for managing tourism flows, organising cultural events, and maintaining sites.





Figure 5. Heritage Walks and Storytelling Nights

Source: Archive of Begandring Soerabaia

Bank Indonesia shifted its role from funder to mentor, offering support for business continuity and resilience. These adaptive strategies indicate that Peneleh's revitalisation became a living heritage system—where built environments, cultural practices, and social networks mutually reinforced one another. The integration of physical, economic, and cultural sustainability aligns with multi-dimensional frameworks of heritage resilience (Biedermann et al., 2024; Rasoolimanesh et al., 2017).

Tangible Revitalisation Outcomes

The Peneleh revitalisation generated demonstrable outcomes across three domains: physical restoration, economic revitalisation, and socio-cultural renewal. Each outcome was the result of deliberate synergy among pentahelix actors, whose combined efforts created a model for participatory heritage regeneration. *Physical Domain*

The project yielded a substantial physical transformation. Derelict buildings, decaying landmarks, and marginal public spaces were restored with attention to authenticity and adaptive reuse. Sites such as Bung Karno's Birthplace, the Old European Cemetery, and Langgar Dukur were structurally rehabilitated and repurposed for educational, religious, and tourism purposes.



Figure 6. Accessibility Revitalisation at Old European Cemetery

Source: Archive of Begandring Soerabaia

Table 1. Physical Revitalisation Interventions

Heritage Site	Type of Intervention	New Function
Bung Karno's Birthplace	Restoration, repainting, and drainage	Museum and education centre
H.O.S. Cokroaminoto House	Structural and aesthetic repair	Interpretive space
Roeslan Abdul Gani House	Interior restoration, exhibits	Exhibition venue
Jami Mosque	Conservation, signage, drainage	Active religious site
Langgar Dukur	Traditional repainting, roof repair	Heritage tour stop
Old European Cemetery	Tombstone preservation, fencing	Open-air learning space
Jobong Well	Wall reinforcement, safety improvements	Symbolic heritage site

Source: Research data, 2025

These interventions exemplify a best-practice approach that integrates architectural restoration with participatory interpretation and spatial activation. The addition of signage, AR media, and educational materials enhances visitor engagement and supports layered use of heritage sites (Annisa & Lukito, 2024; Ye et al., 2025).

Economic Domain

The revitalisation catalysed local economic development. Supported by CSR funding, kiosks and cultural cafés were established along tourist routes and at heritage sites. Signature events—such as the Java Coffee Culture Festival—provided MSMEs with a platform to showcase and monetise their local products.



Figure 6. Java Coffee Culture Festival Flyer Source: Instagram of Kampung Heritage Peneleh

Entrepreneurs received training in digital marketing and financial literacy, enabling some businesses to expand online. Youths trained as guides were integrated into curated tourism packages, ensuring that economic benefits circulated locally. These outcomes confirm findings that heritage, when mobilized inclusively, can generate durable economic resilience (Gravagnuolo et al., 2021). Economic participation was not an externality, but a structural component of the revitalization ecosystem.

Socio-cultural Domain

Revitalization fostered renewed pride and collective agency. Through intergenerational programs, residents co-authored tourism narratives and reactivated intangible practices such as storytelling, batik-making, and musical performances. Schools introduced heritage themes into their curricula, while public spaces became hubs of communal learning and creativity. Importantly, residents did not merely consume heritage—they co-produced it. These dynamics mirror research emphasizing the transformative power of participatory heritage practices in fostering social cohesion and resilience (Bui et al., 2020). The reactivation of both tangible and intangible culture ensured that Peneleh's identity was not museumized but lived, practiced, and continuously renewed.

Discussion

This study has investigated the role of stakeholder collaboration, framed through the pentahelix model, in shaping the revitalization of the Peneleh heritage tourism area. The findings affirm that coordinated engagement among government, academia, community organizations, media, and the business sector can yield multi-dimensional outcomes—ranging from physical conservation to economic revitalization and sociocultural renewal. Beyond these empirical insights, the study contributes important conceptual refinements to prevailing understandings of collaborative governance in urban heritage contexts.

Reframing Pentahelix as a Dynamic Governance Model

One of the most significant theoretical contributions of this study is the recharacterization of the pentahelix framework as a fluid, adaptive governance model rather than a static configuration of stakeholder roles. Whereas existing literature frequently assigns predefined functions to pentahelix actors (e.g., government as regulator, community as participant) (Hardianto et al., 2019), the Peneleh case illustrates that these roles are highly contingent on the phase and nature of revitalization. For instance, community actors evolved into coordinators and curators of cultural heritage; businesses contributed to early-stage planning and entrepreneurial training, while the media acted as a catalyst for public engagement throughout the process. This finding extends (Saito and Ruhanen, 2017) argument that flexibility and role fluidity, rather than rigid actor delineation, are essential to collaborative governance. Accordingly, the pentahelix model may be more

accurately conceptualized as a relational ecosystem—a network of evolving interdependencies—than as a static five-point typology.

Mechanisms of Effective Collaboration: From Structure to Synergy

The study identifies three interdependent mechanisms that underpinned effective collaboration in Peneleh: co-creation, distributed decision-making, and resource synergy: 1) Co-creation occurred when academic, cultural, and community knowledge were fused to shape a shared revitalization agenda—reflecting a shift from instrumental consultation to epistemic collaboration; 2) Distributed decision-making enabled local actors—particularly community groups—to influence planning and policy directions, advancing the normative ideal of participatory governance (Permadi et al., 2021); 3) Resource synergy emerged through the strategic alignment of stakeholder assets: technical expertise, regulatory capacity, cultural legitimacy, financial capital, and media outreach were integrated to produce outcomes unattainable by any single actor. These mechanisms collectively refine collaborative governance theory by demonstrating that inter-stakeholder complementarities, rather than isolated contributions, drive the success of complex revitalization efforts.

Re-centering Community Agency in Heritage Governance

A central finding of this study is the transformative role of community-led agencies in determining the outcomes of heritage revitalization. While community actors are formally one of the five pillars in the pentahelix model, their role in the Peneleh case transcended participation. These groups functioned as custodians of intangible heritage, as narrative producers, and as operational managers of cultural events and heritage spaces. Rather than being passive recipients of top-down interventions, the community assumed leadership roles that shaped not only the tourism experience but also the interpretive frameworks through which heritage was understood and communicated. This finding resonates with (Liorančaitė-Šukienė and Jurėnienė, 2025), who underscore community agency as a core epistemic and operational driver of heritage value. It also diverges from hierarchical governance models (e.g., Hall, 2011), affirming instead a horizontal governance structure in which authority is shared and legitimacy is co-produced.

Reconceptualizing Media and Business Roles

The study further extends the theoretical scope of pentahelix collaboration by re-evaluating the functions of media and business actors, which are often treated as peripheral or instrumental. In the Peneleh revitalization, media platforms acted as narrative framers and public accountability agents, sustaining citizen interest and framing revitalization as a collective, identity-driven project. Likewise, business actors—particularly through CSR programs—played a foundational role in infrastructure provision, MSME development, and entrepreneurship training, thereby contributing to long-term economic sustainability. These insights complement and deepen previous work by (Müller and Åkerlund, 2013), suggesting that non-governmental actors are not mere facilitators but essential drivers of sustained heritage vitality.

Toward a Contextualized, Community-Led Pentahelix Framework

Ultimately, the findings suggest a more context-sensitive and community-anchored variant of the pentahelix model. The interplay of physical conservation, economic empowerment, and socio-cultural reactivation in Peneleh was not coincidental but strategically cultivated through adaptive collaboration. Capacity building, media visibility, and community coordination created recursive feedback loops—where successful revitalization attracted greater investment, deepened local engagement, and reinforced heritage pride. These outcomes align with recent research emphasizing relational synergy over institutional structure (Briciu et al., 2025; Sani et al., 2025). Building on this, we propose a "community-led collaborative governance" model as a refined interpretation of the pentahelix approach—one that emphasizes: 1) Adaptive stakeholder roles, 2) Rotating leadership, 3) Co-produced knowledge, and 4) shared accountability mechanisms. This model not only addresses theoretical gaps in collaborative governance but also offers a pragmatic roadmap for policymakers and practitioners seeking to implement inclusive, resilient heritage revitalization in rapidly urbanizing contexts.

CONCLUSION

This study has explored how multi-stakeholder collaboration—conceptualized through the pentahelix model—shaped the revitalization of the Peneleh heritage tourism area in Surabaya. The findings illustrate that the pentahelix framework operates not as a static constellation of actors but as a dynamic, adaptive governance mechanism, in which stakeholder roles evolve across the different phases of revitalization. Through co-

constructed planning, shared implementation, and sustained engagement, collaboration among government entities, academic institutions, business actors, media organizations, and local communities produced integrated physical, economic, and socio-cultural outcomes.

Theoretical Contributions

Conceptually, this study advances a more processual and relational understanding of collaborative governance in urban heritage contexts. The Peneleh case demonstrates that the effectiveness of the pentahelix model hinges on the adaptive reconfiguration of stakeholder roles in response to contextual demands. Rather than adhering to predefined functions, actors assumed leadership, support, or coordination roles fluidly across the revitalization trajectory. Three core mechanisms emerged as particularly influential: 1) Co-creation of ideas, through the integration of expert knowledge and community insights; 2) Distributed decision-making, involving both formal institutions and informal civic actors; 3) Strategic resource synergy, leveraging complementary assets to pursue shared objectives. These findings refine existing models of collaborative governance by demonstrating how stakeholder interdependence and role fluidity foster innovation, legitimacy, and sustainability in complex heritage environments.

Practical Implications

For policymakers and practitioners, the study offers actionable guidance for designing inclusive and resilient revitalization strategies: 1) Institutionalizing participatory planning from the outset can embed local perspectives into policy and design; 2) Continuous media engagement not only sustains public awareness but also cultivates collective ownership; 3) Business sector involvement, when focused on capacity building and entrepreneurial support, extends impact beyond financial contributions; and 4) Community empowerment, particularly in heritage interpretation, digital storytelling, and micro-entrepreneurship, enhances local agency and fosters inclusive economic development. These insights highlight the importance of integrating cultural, economic, and social strategies within a unified revitalization framework, rather than addressing them as separate policy domains.

Limitations and Future Directions

While the study provides rich empirical insights, its scope is confined to a single case within a particular socio-cultural and urban context, limiting the generalizability of findings. Moreover, the perspectives of tourists and external visitors were not incorporated, despite their relevance in assessing experiential and market-based outcomes of heritage tourism. Future research could address these limitations by: 1) Conducting comparative cross-case studies across different urban heritage contexts; 2) Adopting longitudinal designs to examine the stability or evolution of stakeholder collaboration over time; and 3) Investigating the visitor perspective, particularly in relation to narrative construction, perceptions of authenticity, and post-revitalization demand.

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