

Sustainable Post-Covid-19 Public Space in The Prambanan Temple Area, Central Java: A Social Design Practice Approach

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ABSTRACT: *Pandemic-related changes in public-space use show that heritage sustainability depends not only on physical conditions but also on how social practices and management respond to changing needs. This study examines post-pandemic public space in the Prambanan Temple Area through a Social Design Practice approach. Qualitative data from interviews, observation, documentation, and focus group discussions were analyzed thematically with NVivo. Interpretation connects Lefebvre's theory of the production of space with Relph's place identity and Tuan's sense of place. Findings show that change in Prambanan was not merely a recovery of activities, but a reconfiguration of circulation, visitor capacity, hygiene facilities, tourism-cultural-economic activities, management, and the protection of historical and sacred values. The synthesis constructs Social Design Practice as a core mechanism linking spatial production and meaning. The resulting processual-cyclical model identifies four outputs: adaptation of circulation, capacity, facilities, and management; accommodation of diverse activities; collaboration among actors; and alignment with conservation and heritage values. User experience, evaluation, emerging needs, and policy changes provide feedback for the next cycle. This is a context-specific synthesis of Prambanan, not a standard model for all heritage areas.*

KEYWORDS: *Adaptation, Heritage, Place Identity, Production of Space, Public Space*

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I. INTRODUCTION

The Prambanan Temple Area is a heritage area of considerable historical, religious, and cultural significance, while also accommodating social, cultural, economic, and tourism activities. This study understands public space not as a static physical container, but as a social space continually produced, used, managed, and interpreted through relationships among actors, policies, design, and activities. This perspective is consistent with the view that public-space quality is associated with its capacity to support accessibility and social activity [1], while heritage is continually reinterpreted in relation to social, political, and economic contexts [2].

The COVID-19 pandemic disrupted public-space use and exposed its dependence on the continuity of social practices. In Prambanan, access restrictions, circulation management, reduced capacity, the addition of hygiene facilities, and declining tourism activity changed how the space was used and managed. During the post-pandemic phase, tourism, cultural, economic, educational, and community activities resumed, but this did not simply restore pre-pandemic conditions. Instead, these changes indicate a reconfiguration of the relationships among spatial functions, management, activities, and heritage values.

This article establishes an operational periodization of the pandemic and post-pandemic phases to clarify the meaning of "post-pandemic." Indonesia's first COVID-19 cases were announced on 2 March 2020, and the World Health Organization declared COVID-19 a global pandemic on 11 March 2020. In Indonesia, Presidential Decree No. 11 of 2020 declared a public health emergency, while Presidential Decree No. 24 of 2021 affirmed that the pandemic remained a factual condition. Presidential Decree No. 17 of 2023 subsequently declared the end of the COVID-19 pandemic status in Indonesia and changed its factual status to an endemic disease, effective 21 June 2023 [3][4]. Accordingly, this study treats March 2020–20 June 2023 as the pandemic context and the period beginning 21 June 2023 as the post-pandemic context for analytical purposes. "Post-pandemic" is not used here as an epidemiological term replacing "endemic," but as an analytical marker for the phase after the official end of pandemic status, when public space undergoes reconfiguration in its activities, management, user experiences, and heritage values. Table 1 compares the two periods.

Table 1. Operational Comparison of the Pandemic and Post-pandemic Contexts

Aspect	COVID-19 Pandemic	Post-pandemic / Endemic Period
Timeframe	March 2020–20 June 2023	From 21 June 2023
Policy status	Public health emergency; restrictions on access and activities; and infection control	Pandemic status ended; COVID-19 became an endemic disease and management shifted to the endemic phase
Public-space conditions	Restricted access and capacity; managed circulation; additional hygiene facilities; reduced tourism activity	Tourism, cultural, social, economic, educational, and community activities resumed with adjustments to management
Use characteristics	More controlled and limited, with emphasis on safety and reducing contact	More diverse and adaptive, with emphasis on user experience, sustainability, and continuity of heritage values
Analytical meaning	A phase of disruption and reconfiguration of spatial practices	A phase of adaptation and reproduction of space after the end of official pandemic status

Theoretically, these changes can be interpreted through Lefebvre's theory of the production of space, which understands space as the product of social processes rather than merely a material object [5]. Fuchs [6] further demonstrates the relevance of this theory for understanding relationships among practice, representation, and lived space. However, the production of space alone does not fully explain how experience, identity, and the meaning of place emerge. This study therefore integrates Relph's concept of place identity [7] and Tuan's concept of sense of place [8] to interpret the experiential and meaning-making dimensions of space.

Previous studies have addressed public-space quality, heritage-area management, and sustainable tourism, but fewer have jointly explained how post-pandemic change in heritage public spaces occurs alongside the production of space and the formation of place meaning. This article examines these relationships through the case of the Prambanan Temple Area, positioning Social Design Practice as a mechanism connecting management decisions, user activities, and experiences of heritage values. The aim is therefore not simply to describe changes in the area, but to explain the social mechanisms underlying them and develop a conceptual model derived from the specific conditions of Prambanan.

The study aims to: (1) identify changes in and characteristics of post-pandemic public space in the Prambanan Temple Area; (2) analyze the role of Social Design Practice in the production and meaning of space; and (3) formulate a sustainable public-space model based on Social Design Practice in a heritage context. Its principal contribution is the conceptual construction of Social Design Practice as a core mechanism connecting the production and meaning of space, represented in a processual and cyclical model.

II. LITERATURE REVIEW

Public space is understood as a setting that enables diverse activities and interactions. In heritage contexts, public space is complex because social and economic functions must coexist with conservation and the continuity of cultural values. Recent research on the Borobudur–Yogyakarta–Prambanan tourism ecosystem emphasizes the importance of stakeholder connections and contributions from businesses, government, communities, academia, and the media to the sustainability of the area [9]. Studies of accessibility and activity indicate that public-space quality depends on its capacity to support diverse uses [1]. In heritage areas, spatial use is also related to the reinterpretation of values and identity [2].

Lefebvre [5] distinguishes three dimensions of the production of space: spatial practice, representations of space, and representational spaces. This framework allows the study to examine user activities, governance and policy, and lived experience as interconnected dimensions. Fuchs [6] shows that the production of space can be understood as a social process involving practices and communicative relationships. In Prambanan, this framework is used to interpret how tourism, cultural, economic, social, educational, and community activities, together with policies, zoning, circulation, and conservation, contribute to the production of public space.

The meaning-making dimension is examined through Relph [7] and Tuan [8]. Place identity is used to understand the continuity of the area's identity, while sense of place helps interpret users' experiences and meanings. The production of space is therefore not separated from lived experience: spatial and management changes influence how a place is experienced, while use practices and user experiences can generate new meanings.

Based on this synthesis, Social Design Practice is positioned as an analytical concept explaining the connecting mechanism. In this study, the term refers to a sequence of interactions, collaboration, coordination, negotiation, adaptation, design intervention, and management occurring in the use and formation of space. Participation is treated cautiously as a direction for strengthening user involvement, rather than as a claim that all processes have already operated through systematic co-design.

III. METHODOLOGY

This study uses a qualitative approach to understand spatial change, social practices, experience, and meaning in the Prambanan Temple Area. The approach is appropriate because the research focuses on processes and relationships across contexts rather than on measuring variables alone. A qualitative design enables the integration of interviews, observation, documentation, and focus group discussions [10].

Data were obtained from area managers, government representatives, local communities, business operators, cultural communities, academics, cultural practitioners, and designers. Observation was used to identify changes in spatial functions, circulation, facilities, activities, and patterns of use before, during, and after the pandemic. Interviews and focus group discussions explored experiences, perceptions, interactions, management, negotiation, and spatial meaning. Documentation and supporting records were used to strengthen the interpretation of changes in the area.

Analysis involved open coding, development of a coding tree, matrix coding, concept mapping, and thematic synthesis with NVivo. This process generated five analytical themes: (1) post-pandemic changes in public space; (2) production of space; (3) meaning of space; (4) Social Design Practice; and (5) sustainable public space. These five themes organize recurring patterns in the data, whereas T1–T7 refer to seven analytical findings developed through interpretation and synthesis of the themes—not seven additional themes. To maintain a clear analytical sequence, findings on spatial change and production (T1–T3) address the first research question; findings on spatial meaning and the connecting mechanism (T4–T5) address the second; and the synthesis of output characteristics (T6) and the conceptual model (T7) address the third. T6 and T7 are not new coding categories: T6 synthesizes earlier findings, while T7 is a conceptual construction integrating the relationships among them.

IV. RESULTS AND DISCUSSION

4.1 Changes in Public Space after the Pandemic

A comparison of the three periods reveals specific changes in how the area was used and managed. Before the pandemic, tourism, cultural performances, economic activities, social interaction, and community events took place more openly. During the pandemic, access and capacity were restricted, one-way circulation was introduced, and hygiene facilities were added. After the official end of pandemic status, tourism, cultural, social, economic, educational, and community activities resumed, within a management context that had to consider visitor experience, safety, and conservation. Recovery therefore did not simply restore pre-pandemic conditions; it also changed the relationship among rules, facilities, movement patterns, and the range of activities.

Three findings explain spatial change and production in Prambanan. First, public space functions as a dynamic social space because patterns of use change in response to health conditions, policies, and activities in the area. Second, tourism, cultural, ritual, economic, educational, and community activities shape spatial functions and intensity of use. Third, governance, zoning, capacity, circulation, facilities, and conservation determine which activities can take place. Together, these findings address how public space changes and is produced; the discussion of the model follows only after the relationship between spatial production and meaning has been examined.

4.1.1 Spatial Transformation as a Social Process

Spatial change across the three periods should be understood as a change in the relationship among space, activity, and management. The findings do not indicate only a decline in use during the pandemic; they also show changes in how space was regulated and experienced. During the pandemic, access restrictions, capacity controls, one-way circulation, and additional hygiene facilities responded to public-health conditions while introducing new arrangements for spatial use. As activities increased after the pandemic, some of these management logics did not simply disappear but became part of the ongoing adjustment of the area.

From Lefebvre's perspective on the production of space [5], these changes show that space is continually shaped through practice. Changes in circulation, capacity, facilities, and management demonstrate that public space is not separate from social dynamics. Rather, it is an arena where policies are translated into practice and users respond through their patterns of activity. This supports the finding that post-pandemic public space is a dynamic social space. It also indicates that sustainability cannot be assessed solely from the physical condition of space at a single point in time, but must include its capacity to respond to social and institutional change.

4.1.2 Social Activity as a Driver of Spatial Production

Social activities do not merely occupy existing space; they also shape its function, intensity, timing, and patterns of use. In Prambanan, tourism, cultural, ritual, economic, educational, and community activities generate different spatial needs. The same location may function as a route, gathering place, service area, or

venue for cultural activities depending on the program, time, number of users, and management rules. Activities therefore help produce space, while spatial form and regulation also influence which activities can occur.

This relationship reveals two directions of spatial production. From below, space is produced through use practices, interaction, and the activities of residents and visitors. From above, space is shaped through governance, policies, zoning, capacity, circulation, facilities, and conservation. These directions are not separate: policy can change activity patterns, while changing activities can inform management adjustments. The reciprocal relationship between social activity and management is therefore central to the reproduction of public space in Prambanan.

4.1.3 Governance and Conservation as Conditions Shaping Spatial Use

Governance, policy, and conservation shape possible uses of space through the regulation of access, zoning, capacity, circulation, facilities, services, and area programs. In Prambanan, these arrangements cannot be separated from the need to protect the area's archaeological, historical, cultural, and sacred values. Policy becomes tangible to users when translated into signs, movement routes, capacity limits, facility placement, or activity requirements. The finding shows that spatial production occurs through the relationship between user activity and institutional decisions, not solely through physical change.

Finding T3 also demonstrates why policy should be understood as part of spatial production rather than merely as an administrative document. When policies are implemented through signs, circulation routes, capacity restrictions, hygiene facilities, services, or activity management, they become materially and socially present in users' experiences. Post-pandemic change thus shows how institutional decisions enter spatial practices and influence how users understand the area. This interpretation aligns with Lefebvre's framework concerning the relationship between spatial practice and representations of space [5].

4.2 Production of Space and the Meaning of Place

The analysis identifies two interconnected dimensions. Spatial production is evident in everyday activities and institutional decisions governing zoning, circulation, capacity, facilities, and conservation. The meaning of space emerges through user experience, continuity of the area's identity, comfort, cultural values, and sacred character. In Prambanan, circulation or capacity arrangements do more than change movement; they also shape experiences of crowding, accessibility, and the sequence of visits. Conversely, these experiences can inform management evaluation. This relationship provides the basis for examining spatial meaning and, subsequently, Social Design Practice as the connecting mechanism.

In terms of meaning, experiences of Prambanan are shaped by the intersection of everyday spatial use and the continuity of heritage values. The area's identity is expressed not only through the temple structures but also through the relationship between tourism and cultural activities and the history, conservation, and sacred character of the place. Experiences of comfort, access, crowding, and services contribute to how users experience the area, but do not replace heritage values as the context that shapes meaning. This finding addresses the second research question in terms of how space is experienced and interpreted; the social mechanism linking these experiences with spatial decisions is discussed in the next section.

4.2.1 Spatial Production through Lefebvre's Three Dimensions

Reading the data through Lefebvre's three dimensions helps explain how spatial production in Prambanan occurs through the interrelationship of practice, representation, and experience. Spatial practice is visible in tourism, cultural, economic, social, educational, and community activities taking place in the area. Representations of space appear in governance, policy, zoning, circulation, capacity, facilities, and conservation measures that guide use. Representational spaces can be interpreted through the experiences, identity, comfort, cultural values, and sacred character associated with the place. These dimensions are treated as interconnected analytical categories rather than separate components.

In the post-pandemic context, these relationships are more visible because a change in one dimension can affect the others. Circulation management, for example, is a management decision that also changes movement practices and user experience. The addition of hygiene facilities is a material intervention arising from health needs, but it may also affect perceptions of safety and comfort. Conversely, user experiences of crowding, access, comfort, and service quality can inform management evaluation. This reciprocal relationship provides the basis for interpreting Social Design Practice as a connecting mechanism.

4.2.2 Place Identity, Experience, and Spatial Meaning

The findings on spatial meaning show that changes in spatial function do not automatically erase heritage identity. Tourism, cultural, economic, educational, and community activities can add layers of use and experience as long as they continue to respect the area's historical, cultural, conservation, identity, and sacred values. Prambanan's distinctiveness lies in the need to accommodate diverse public activities without treating

the area merely as a general tourism space. Adaptation must therefore be guided and constrained by the heritage character rather than applied as context-free flexibility.

Comfort in the findings is also related to meaning. In archaeological areas, comfort has measurable environmental dimensions; research on Prambanan Temple Tourism Park indicates that shading strategies and vegetation management can improve visitors' thermal comfort [11]. Safety, circulation, crowding, facilities, and ease of use all influence experience quality. In a heritage context, these experiences coexist with cultural values and sacredness. Comfort therefore means more than physical convenience; it also concerns the capacity of space to offer an experience consistent with the character of the place.

This finding is important because changes in spatial function do not necessarily imply the loss of heritage identity. The reactivation of tourism, cultural, economic, educational, and community activities can create new layers of meaning when changes remain connected to the area's historical, cultural, conservation, identity, and sacred values. Continuity of meaning does not require preserving every previous condition unchanged; it requires maintaining core values while the use of space adapts. This understanding provides a conceptual bridge to the analysis of Social Design Practice.

4.2.3 Spatial Change and the Continuity of Heritage Meaning

An important implication of finding T4 is the need to distinguish changes in patterns of use from changes in the meaning of place. The post-pandemic period brought changes in visitation, capacity, circulation, facilities, and activities, but these changes do not in themselves erase heritage identity. Continuity of identity can instead provide a framework for deciding how change should occur. Heritage therefore functions not only as an object of protection but also as a context that sets boundaries and directions for spatial adaptation. This is consistent with the understanding of heritage as a process of interpretation and identity rather than merely the presence of physical artefacts [2].

This relationship between change and continuity shows that heritage public spaces must manage two needs simultaneously. First, space must be flexible enough to respond to changing user needs and social conditions. Second, this flexibility must preserve the character and values of the place. In Prambanan, these needs are visible in the relationship between tourism and cultural activities and conservation, between improved access and circulation management, and between comfort needs and respect for sacredness. Adaptation in this study therefore does not mean unrestricted change; it means adaptation contextualized by heritage.

This understanding enriches the concept of public-space sustainability. A space that continually changes is not necessarily sustainable if the changes remove the values underpinning its identity. Conversely, a space that preserves all previous conditions too rigidly may lose the capacity to respond to emerging social needs. Sustainability lies in maintaining continuity of values while adapting how space is used, managed, and experienced. This is why heritage-contextual character is positioned as one of the model's key outputs, alongside adaptability, accommodation, and collaboration.

This relationship also clarifies the role of user experience. Experience is not merely the final outcome of design but can serve as a source of evaluation for adaptation. Circulation changes can be evaluated through movement experiences; facility changes through comfort; capacity changes through crowding; and program changes through social and cultural experiences. When user experience is considered alongside identity and heritage values, evaluation asks not only whether a space functions, but also whether its functions remain appropriate to the character of the place. This provides the conceptual basis for the feedback mechanism in T7.

4.3 Social Design Practice as the Core Mechanism

In the Prambanan case, Social Design Practice is conceptualized as the mechanism linking spatial production and the meaning of space. This mechanism is evident in interaction, collaboration, coordination, negotiation, adaptation, design intervention, and management. These practices translate needs and constraints into adjustments to functions, circulation, facilities, programs, and services; at the same time, user experiences and interpretations of heritage inform subsequent adjustments. This section therefore addresses the second research question in terms of the mechanism, complementing the discussion of experience and place identity in Section 4.2.

Negotiation is important because heritage areas bring together conservation interests, tourism, local economies, user comfort, and sacred values. Collaboration and coordination enable actors to manage these interests, while adaptation allows the area to respond to changing conditions. Participation emerges primarily as a need to strengthen user involvement in evaluation, use, and program development; the study does not claim that all processes have taken place through formal co-design.

4.3.1 The Mechanism Linking Spatial Production and Meaning

The position of Social Design Practice as a core mechanism is an analytical synthesis, not a term directly supplied by informants. Interaction enables the exchange of experiences and needs; collaboration

supports role-sharing; coordination aligns implementation; negotiation brings different interests into discussion; adaptation responds to change; design intervention translates needs into spatial arrangements; and management sustains ongoing use. In Prambanan, this sequence matters because tourism, cultural activities, local economic activities, user comfort, conservation, and sacredness cannot always be maximized in the same way or at the same location. The mechanism explains how spatial decisions affect user experience and how experience can inform subsequent decisions.

This concept also explains why the study does not treat design solely as a physical outcome. If design were understood only as an object, changes in circulation, capacity management, services, programs, and governance would be difficult to interpret as part of design practice. Here, design is understood more broadly as a practice enacted through social processes and decisions affecting space. Social Design Practice can therefore connect management structures with patterns of use, as well as user needs with the continuity of heritage values.

4.3.2 Negotiating Interests in a Heritage Context

Negotiation is important because heritage public spaces involve interests that do not always coincide. Research on the Peneleh heritage settlement in Surabaya shows that tourism and everyday life can create a need to negotiate mobility, social activity, public functions, and community interests [12]. Conservation seeks to protect the area's values and character; tourism requires access, services, and adequate capacity; economic activities require space and visitor flows; communities need space for social and cultural activities; and users need safety, comfort, and accessibility. These interests cannot always be fully accommodated at the same time and place. Spatial formation therefore requires adjustment and alignment.

Negotiation does not necessarily involve open conflict. It can take the form of adjusting rules, allocating space, scheduling activities, changing capacity, coordinating programs, or adapting services. Negotiation is thus part of spatial production because its outcomes influence what can be done, by whom, when, and under what conditions. At the same time, the outcomes shape user experience and perceptions of the area's character. This is where the relationship between spatial production and meaning becomes analytically concrete.

4.3.3 Collaboration, Coordination, Adaptation, and the Limits of Participation Claims

Collaboration and coordination show that the production of space in Prambanan involves multiple actors. Area managers, government, local communities, business operators, cultural communities, practitioners, academics, and designers are connected through different relationships depending on the activity and management context. This empirical evidence supports the model's collaborative characteristic, but it does not mean that all actors have equal authority or positions in every decision. These differences make coordination and negotiation necessary. Research on sustainable tourism management in Prambanan also highlights the importance of institutional coordination, conservation, and community welfare [13].

Adaptation connects changing conditions with spatial responses. During the pandemic, adaptation was visible in changes to access, circulation, capacity, facilities, and management. After the pandemic, adaptation continued through the reactivation of activities and further adjustments to functions and services. Adaptation is therefore not a one-off action but a capacity to adjust space to changing needs and conditions. This understanding underpins the adaptive characteristic in T6.

Participation is treated cautiously. Literature on participatory design in heritage contexts suggests that community involvement can help maintain territorial identity and produce solutions more consistent with local character and needs [14]. The data indicate support for greater user involvement and more participatory spatial development, but they are insufficient to conclude that co-design or participatory decision-making has been systematically implemented throughout the process. Participation is therefore positioned as a direction for strengthening Social Design Practice. This limitation is important to ensure that the model reflects the strength of the evidence and does not convert a participatory aspiration into an empirical fact that has not been fully demonstrated.

4.4 A Sustainable Public-Space Model

Finding T6 summarizes four output characteristics traceable to the Prambanan case. Adaptability specifically refers to adjustments to access and circulation, capacity, hygiene facilities, services, programs, and management as conditions and activity intensity change. Accommodation refers to the capacity of space to support diverse tourism, cultural, ritual, economic, educational, and community activities while considering safety, comfort, access, and conservation limits. Collaboration refers to coordination and joint work among area managers, government, communities, businesses, cultural groups, academics, practitioners, and designers, whose authority is not always equal. Heritage contextuality means that adaptation and spatial use remain guided by Prambanan's historical, cultural, conservation, identity, and sacred values. These four characteristics are not normative labels that can simply be transferred to every area; their indicators and forms must be derived from the specific conditions of each place.

Model T7 integrates the heritage context and post-pandemic changes, actors, Social Design Practice, spatial production, spatial meaning, the four output characteristics, and the sustainability outcome. The model is processual because it explains how these elements relate to one another, and cyclical because user experience, evaluation, emerging needs, policy changes, and changes in practice can trigger further adjustments. Its specificity to Prambanan lies in the relationship among access and capacity management, hygiene facilities, diverse tourism-cultural-economic activities, stakeholder coordination, and the obligation to protect archaeological values and the area's sacred character. The model does not prescribe a fixed physical form and has not been tested as an implementation instrument; its contribution is a framework for interpreting spatial change contextually.

4.4.1 From Empirical Findings to Output Characteristics

T6 is not an independent category but a synthesis of T1–T5. The adaptive characteristic derives from evidence of changes in functions, circulation, capacity, facilities, services, and management in response to changing conditions. Accommodation of diverse users and activities derives from the range of tourism, cultural, social, economic, educational, and community functions and the related needs for safety, comfort, and accessibility. The collaborative characteristic is derived from relationships among actors in activities and management. Heritage contextuality derives from the continuity of the area's history, culture, conservation, identity, and sacred values. The four characteristics are therefore synthesized outputs rather than normative principles added from outside the data.

The distinction between principles and output characteristics is also conceptually important. Principles provide the foundation or direction guiding the process, whereas output characteristics describe the qualities produced by that process. In this study, collaboration, adaptability, participation as a direction for strengthening involvement, heritage contextuality, and spatial meaning serve as guiding principles. The outputs supported by the empirical synthesis are adaptability, accommodation of diverse users and activities, collaboration, and heritage contextuality. This distinction prevents the model from mixing processes, principles, and results at the same analytical level.

4.4.2 The Processual and Cyclical Model

Model T7 is not intended as a linear sequence that ends once sustainable public space has been produced. The heritage context and post-pandemic changes provide the starting point; Social Design Practice works through this context via interaction, collaboration, coordination, negotiation, adaptation, design intervention, and management; and spatial production and meaning then operate reciprocally. The process produces spatial characteristics that contribute to the outcome of sustainable public space. However, that outcome generates new experiences and evaluations that may lead to emerging needs, policy changes, or changes in social practice. This feedback activates the next cycle.

The cyclical nature of the model has important implications for managing heritage areas. Sustainability is not understood as a final condition achieved once and then maintained without change. Rather, it is the capacity to preserve core values while adjusting how space is used and managed. Adaptation is therefore not positioned in opposition to conservation. It must operate within heritage values so that functions and services can change without erasing the area's identity. This approach brings post-pandemic change into dialogue with the need for heritage continuity.

4.4.3 Conceptual Contribution and Management Implications

The study's conceptual contribution lies in constructing Social Design Practice as a core mechanism connecting spatial production and meaning. This construction emerges from a synthesis of empirical findings and theory rather than from any theory used in isolation. Lefebvre provides a framework for understanding spatial production, Relph and Tuan help interpret place identity and experience, and coding and thematic synthesis reveal the social mechanism connecting them. The novelty therefore lies in how this relationship is conceptually constructed in the context of post-pandemic public space in a heritage area.

The practical implication is that public-space management should not focus solely on the provision of physical facilities. Evaluation should also examine how facilities, circulation, capacity, programs, and policies affect activities and user experiences, and whether changes preserve heritage values. This framework can inform the future development of operational indicators, such as adaptability, accommodation of diverse activities, quality of collaboration among actors, and consistency of change with heritage values. These indicators have not been quantitatively tested in this study, so their use as an evaluation instrument requires further development and validation.

4.4.4 The Model and Public-Space Sustainability

Sustainability in this model is not reduced to the environmental dimension, although environmental concerns and conservation remain important. Here, sustainability includes the capacity of space to remain in use and be reproduced through social, institutional, cultural, and experiential relationships. This extends previous research on sustainability in Prambanan, which has also addressed environmental aspects and sustainable tourism [15]. In heritage areas, sustainability must connect the continuity of activities with the continuity of place values. Heritage contextuality is therefore a key component distinguishing this model from public-space frameworks developed outside heritage contexts [16].

The relationship between sustainability and heritage also requires a balance between continuity and change. Rigidly preserving previous conditions can reduce the capacity of space to respond to new needs, while uncontrolled change can diminish the area's identity and values. The processual-cyclical model offers a position between these extremes: change occurs through Social Design Practice, is evaluated against user experience and place values, and is then adjusted. Sustainability thus becomes an ongoing process of learning and adaptation [17].

4.4.5 Traceability from Data to the Model

NVivo was used to organize and trace the data, not as the source of novelty. Interviews, observation, documentation, and focus group discussions were analyzed through coding, relationship mapping, and thematic synthesis. The five themes organize patterns in the data, while findings T1–T7 were developed through the researcher's interpretation in dialogue with theory. In brief, T1–T3 explain spatial change and production; T4 addresses experience and meaning; T5 explains the mechanism linking production and meaning; T6 synthesizes output characteristics; and T7 integrates these relationships into the model. Themes, findings, and the model therefore occupy different analytical levels and should not be treated as interchangeable.

The analytical trail shows a hierarchy linking empirical data, five themes, seven findings, theoretical interpretation, and the model. T1–T3 primarily explain how space changes and is produced; T4 describes experience and place identity; T5 explains the social mechanism linking production and meaning; T6 summarizes output characteristics; and T7 formulates the processual-cyclical model. Since T6 is a synthesis and T7 is a conceptual construction, neither is treated as a new coding theme. This distinction preserves traceability from data to conclusion and prevents the model from appearing without an analytical foundation.

Traceability also helps maintain the distinction between empirical findings and theoretical interpretation. Collaboration, coordination, negotiation, and adaptation are interpreted as practices evidenced in the data, while place identity and sense of place are theoretical lenses for interpreting identity and experience. Similarly, core mechanism is a conceptual construction emerging from the synthesis of relationships among findings, rather than a term directly used by informants. This distinction strengthens the argument by clarifying the status of each level of conclusion [18].

This approach does not claim that all heritage areas should have the same spatial form. Its contribution is a way of interpreting spatial change: context and change prompt Social Design Practice; these practices connect spatial production and meaning; the results can be interpreted through spatial characteristics; and evaluation opens the next cycle of adaptation. The framework can inform the future development of indicators and evaluation tools while allowing for differences in the social, cultural, institutional, and heritage contexts of other areas [19].

Traceability also helps maintain the distinction between empirical findings and theoretical interpretation. For example, collaboration, coordination, negotiation, and adaptation are interpreted as practices evidenced in the data, while place identity and sense of place serve as theoretical lenses for interpreting identity and experience. Similarly, core mechanism is a conceptual construction emerging from the synthesis of relationships among findings, rather than a term directly used by informants. This distinction strengthens the argument by clarifying the status of each level of conclusion [18].

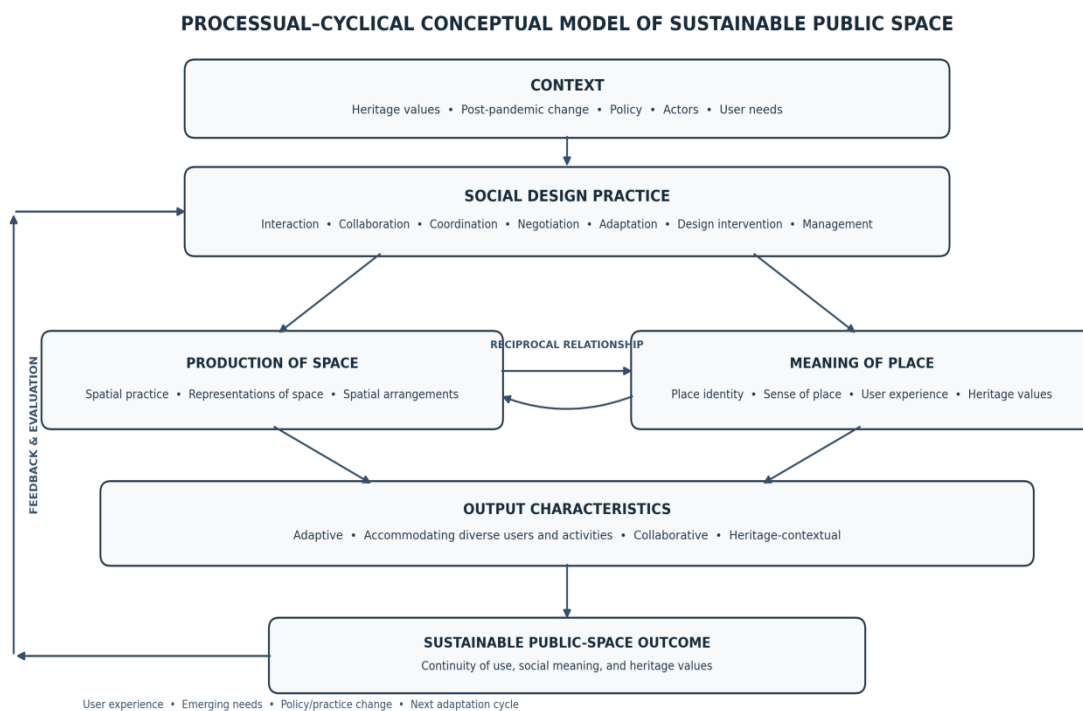


Figure 1. Processual-Cyclical Conceptual Model of Sustainable Public Space Based on Social Design Practice

Source: Researcher's synthesis based on the study findings, 2026.

The novelty of this study lies in the conceptual construction of Social Design Practice as a core mechanism connecting spatial production and meaning in the formation of sustainable public space in a post-pandemic heritage context. This construction is derived from an empirical-theoretical synthesis of the Prambanan case: changes in access, circulation, capacity, hygiene facilities, and tourism-cultural-economic activities are interpreted alongside coordination and negotiation among actors, user experiences, and the continuity of historical, conservation, identity, and sacred values. The processual-cyclical model represents these relationships. The study does not claim a universal law or a physical model that can be copied to other heritage areas; application requires renewed interpretation of each local context.

V. CONCLUSION

This study shows that public space in the Prambanan Temple Area changes through relationships among user activities, management decisions, policies, conservation, and spatial experience. Five analytical themes organized the data, while seven findings were developed through synthesis: T1–T3 explain spatial change and production; T4 addresses meaning; T5 identifies Social Design Practice as the connecting mechanism; T6 summarizes the four output characteristics; and T7 formulates the conceptual model. T6 and T7 are therefore analytical syntheses, not additional themes.

The specificity of the Prambanan model lies in how it connects adjustments to access, circulation, capacity, hygiene facilities, services, and diverse public activities with coordination among actors and the continuity of archaeological, historical, cultural, identity, and sacred values. The four output characteristics—adaptive, accommodating diverse users and activities, collaborative, and heritage-contextual—must be interpreted through these conditions rather than as generic labels. The model remains conceptual and is based on one area; its implementation effectiveness has not been tested. Further research can develop operational indicators and compare how similar mechanisms produce different forms of adaptation in other heritage areas.

The implication for other areas is not to copy physical forms or assume identical outcomes, but to transfer the analytical approach: examine change and place values, identify actors and differing needs, investigate how decisions shape spatial use, understand user experience, and evaluate whether adaptation preserves heritage character. In Prambanan, this analysis specifically concerns visitor flows and capacity, hygiene facilities, diverse tourism and cultural activities, management coordination, and the protection of historical values and sacredness. Other areas may produce different configurations depending on their social, cultural, institutional, and conservation contexts.

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