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Same Void, Different Spatial Logics: Rethinking Natah through Asian Courtyard Traditions

I Putu Udiyana Wasista[a]*, I Made Jayadi Waisnawa[a], Putu Ari Darmastuti[a], Luh Kadek Resi Kerdiati[a]

[a]Institut Seni Indonesia Bali, Indonesia

ABSTRACT
The morphological similarity of *courtyards* across cultures leaves a fundamental question: are seemingly similar empty spaces also understood, shaped, and valued in the same way? This study examines the Balinese *natah*, with traditional Chinese and Indian *courtyards* as conceptual comparisons, through a *structured literature review* and *comparative document analysis*. The data were analyzed through ontological, epistemological, and axiological dimensions. The results show that all three regard emptiness as a meaningful space, but through different mechanisms. The *natah* functions as a relational center that orients building masses and is shaped through spatial knowledge and socio-ritual practices; the Chinese *courtyard* emphasizes axiality, hierarchy, and privacy; whereas the Indian *courtyard* demonstrates diverse relationships among central space, Vastu, ritual, and social order. These findings question the adequacy of the *courtyard* as a cross-cultural morphological category. This study offers an ontological-epistemological-axiological framework for interpreting empty space and emphasizes that the conservation of the *natah* needs to preserve the relationships, knowledge, and practices that make it meaningful.

KEYWORDS
Natah, Courtyard, Spatial Void, Relational Space, Vernacular Architecture

Introduction

If physically similar empty spaces located at the centre of dwellings are found across different cultures, can these spaces automatically be regarded as the same type of space? This question is important because the term *courtyard* often groups diverse domestic spaces according to their morphological similarities, particularly the presence of an open space surrounded or connected by building masses. Cross-cultural studies, however, show that the *courtyard house* is formed through different relationships among orientation, symbolism, social organisation, cultural activities, and environmental conditions [1]. Environmental studies explain its capacity to regulate the microclimate and thermal comfort [2], while social studies reveal its role in

***Corresponding Author**
udiyanawasista@isi-dps.ac.id

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family life, interaction, privacy, and daily activities [3]. The issue becomes more complex when the empty space is no longer interpreted solely through what physically surrounds it. Nelson [4], for example, demonstrates the possibility of understanding the courtyard as a void that retains a social presence, while Farjami [5] shows that emptiness in Iranian architecture may originate from philosophical ideas that subsequently acquire spatial form through the central courtyard. Interpretations of the courtyard in Bengal even question whether the courtyard should be understood merely as an in-between space or instead as an expression of a more fundamental cultural conception of space [6]. Therefore, the issue is no longer simply the function of the courtyard, but something more fundamental: what makes an emptiness recognised as space, through what knowledge that space is organised, and why it is maintained as an important part of domestic life?

This question becomes more pointed when the Balinese *natah* is placed alongside traditional Chinese and Indian courtyards. The three cases are morphologically similar enough to be compared, yet they arise from spatial ordering systems that are not identical. In Chinese dwellings, particularly the *siheyuan*, courtyard space is associated with axiality, hierarchy, privacy, and the social order of the family; Huang et al. [7] demonstrate that its spatial configuration cannot be separated from the social and cultural meanings it embodies. In India, courtyard traditions have developed through regional diversity, although several traditions interpreted through Vastu position the central space in relation to orientation, site division, ritual, and cosmological order. The Balinese *natah* presents a different issue because this empty space serves as a reference for relationships among *bale* (the term for traditional Balinese buildings), the orientation of the residential compound, domestic activities, and ritual practices. Its existence, therefore, cannot be fully explained solely through the category of a courtyard surrounded by buildings. This comparison is consequently not intended to identify a uniform Asian form, but to test the limits of the courtyard category itself: to what extent can formal similarity explain spaces shaped by different systems of knowledge and values? This question also carries implications for debates on the sustainability of vernacular architecture. A study of the courtyard dwellings of the Bai community in China shows that sustainability depends not only on the persistence of physical form, but also on the continuity of relationships among spatial configuration, social structure, and environmental adaptation [8]. Therefore, the issue concerning the *natah* is not merely whether this empty space continues to be retained in contemporary Balinese houses, but what actually persists when its form survives, and what is lost when the knowledge and values that make the space meaningful begin to be severed. An ontological, epistemological, and axiological interpretation of the *natah*, using China and India as conceptual comparisons, is employed to address this issue.

Open space at the centre of a dwelling is a recurring pattern across various Asian architectural traditions, but this formal similarity does not mean that empty space is understood, formed, and valued in the same way. Cross-cultural studies show that the *courtyard house* developed as a spatial system associated with orientation, symbolism, social organisation, and cultural activities, meaning that the courtyard cannot be adequately understood as merely the unbuilt part of a house [1]. Chinese traditions present the courtyard as part of a residential arrangement that carries cultural values and social order. Courtyard architecture influenced by Confucianism contains cultural and historical narratives [9], while research on the *siheyuan*

shows that its spatial arrangement can adapt when transferred to different cultural and climatic environments [10]. Studies of traditional Chinese dwellings also show that architectural sustainability depends not only on preserving form, but also on habits, knowledge, and the ways occupants respond to the environment [11]. Indian traditions provide a different comparison. Courtyards in Kerala dwellings are shaped by relationships among culture, context, climate, and occupants' lives [12], while studies of traditional South Indian houses show that courtyards are associated with public-private and sacred-profane transitions, identity, gender, and social differentiation [13]. A study in Rajasthan also demonstrates the relationship among courtyards, spatial configuration, activities, and the continuity of dwelling traditions [14], while research on Pol Houses in Ahmedabad confirms the connection between courtyards and daily life, rituals, seasons, and social practices [15]. This literature demonstrates the richness of courtyard studies, but most studies still explain courtyards through function, configuration, environment, behaviour, or particular cultural values. A research opportunity remains to bring these findings together through the same three questions: what constitutes the nature of domestic empty space, how the knowledge that shapes and sustains it is produced, and what values make that space important to the lives of its occupants. These three questions provide a basis for interpreting empty space through ontological, epistemological, and axiological dimensions without treating the Asian courtyard as a uniform concept.

The issue becomes more specific when directed towards the *natah* as the central open space of a traditional Balinese dwelling. Previous studies show that the *natah* functions as a shared space for social and customary activities while contributing to air circulation, humidity control, lighting, and environmental comfort [16]. The organisation of the Balinese house is also related to the characteristics of space and occupants' behavioural patterns [17], while the traditional architectural knowledge possessed by the *undagi* demonstrates that the formation of the Balinese house cannot be separated from local knowledge comprising both explicit and tacit elements [18]. Balinese domestic architecture also continues to change in response to economic needs and tourism. These changes can obscure its configuration, hierarchy, and symbolic meanings [19], as well as alter relationships among domestic activities, culture, and the environment [20]. Although these studies have explained the functions, organisation, local knowledge, and transformation of the Balinese house, it remains unclear how the *natah* can be understood comprehensively as empty space if the question shifts from “what is the function of the *natah*?” to “what is the *natah* as space, how do people know and form it, and why is that space valuable?” This study therefore positions the *natah* as its principal object, examined through ontological, epistemological, and axiological dimensions, and uses traditional Chinese and Indian courtyards as literature-based conceptual comparisons. The comparison does not seek to identify the most similar courtyard form or assume that the three cultures share the same conception of space. Instead, it identifies which aspects of the understanding of domestic empty space indicate similarities and which reveal cultural specificity. The research gap lies in the absence of an interpretation that positions the *natah* within the discourse on Asian domestic empty space through these three dimensions. Such an interpretation can explain whether the *natah* is merely one variation of the Asian *courtyard house* or possesses a conception of empty space that cannot be fully explained through existing understandings of the courtyard.

Building on this gap, the study positions the concepts of *void* and *courtyard* as two ways of interpreting domestic empty space that require critical engagement. Courtyard discourse generally explains the courtyard through form, orientation, social function, symbolism, and environmental response [1], while the void perspective enables emptiness to be understood not as a residual part of a building, but as a space that acquires existence through experience and social life [4]. This understanding is reinforced by studies showing that emptiness can be rooted in philosophical ideas and translated into architectural space [5], while research on traditional Chinese dwellings demonstrates that domestic space can also be understood as a sociocultural construction rather than merely a physical arrangement [21]. This study employs ontology, epistemology, and axiology as analytical lenses to examine this tension through three questions: what makes the *natah* exist as space despite being physically empty, how knowledge of its existence and organisation is formed and transmitted, and what values make it remain important to Balinese domestic life. Chinese and Indian courtyards serve as conceptual comparisons to distinguish principles found across cultures from characteristics specific to the *natah*, rather than to claim that the three share the same conception of space. The anticipated theoretical contribution is to clarify the position of the *natah* within void and courtyard discourse by demonstrating the relationship among the existence of empty space, the ways that space is known, and the values that sustain it. The practical contribution is directed towards establishing a basis for interpreting the *natah* that can support the documentation, conservation, and adaptation of Balinese houses, so that decisions to retain or modify the *natah* are based not only on its physical form and dimensions but also consider the knowledge, practices, and values that keep the space meaningful.

Methods

This study employed a structured literature review and comparative document analysis to examine *natah* through ontological, epistemological, and axiological dimensions and subsequently compare it with traditional Chinese and Indian conceptions of the *courtyard*. This design was selected because the research problem concerns spatial concepts, sources of knowledge, and cultural values that can be traced through traditional texts and scholarly research without treating the three cultures as fieldwork cases. The review procedure followed the principles of systematic searching and transparent reporting to ensure that the source selection process could be traced and replicated by other researchers [22], [23].

The data comprised two groups. Primary textual sources included traditional texts explaining the spatial organisation of Balinese houses and, where available in academic translations, traditional sources concerning Chinese and Indian courtyard houses. Secondary sources consisted of journal articles, academic books, dissertations, and conference proceedings discussing *natah, courtyard house, siheyuan, Indian courtyard, void, emptiness*, domestic space, cosmology, social practices, and cultural values. Scholarly sources were searched through academic databases specified before the search, using combinations of these keywords and their corresponding local terms. Each search was recorded in a table containing the database, search date, keywords, number of results, and inclusion or exclusion decisions. Sources were included if they addressed empty space or courtyards in traditional Balinese, Chinese, or Indian dwellings and provided information relevant to at least one research

dimension. Sources were excluded if they only discussed non-residential courtyards, lacked sufficient cultural context, or had unverifiable origins. Duplicates were removed, after which titles and abstracts were screened before the full texts were examined. This procedure produced a final corpus in which all sources and the reasons for their selection were documented, allowing the data collection process to be replicated.

The analysis employed directed qualitative content analysis using a matrix that mapped the three cultures against the three research dimensions. Each text was read, and relevant units of information were recorded together with the corresponding page number or source section. The information was then classified according to cultural context, source type, period, spatial type, and empirical themes such as form, orientation, use, ritual, social relations, environment, and spatial rules. The data were subsequently categorised analytically into ontology, referring to statements concerning what empty space is and how its existence is understood; epistemology, referring to the ways knowledge about the formation, use, and meaning of space is acquired, taught, or transmitted; and axiology, referring to the social, ritual, environmental, symbolic, and practical values attributed to space. The findings were first synthesised for each culture and then compared across contexts to identify similarities, differences, and concepts without direct equivalents. Interpretation was based not on the frequency with which terms appeared, but on the content of statements and the contexts of their sources. Trustworthiness was maintained through source triangulation by comparing traditional texts with scholarly studies, cross-checking major claims against at least two independent sources where available, recording contradictory evidence, and maintaining an *audit trail* comprising the source list, selection criteria, extraction matrix, codes, categories, and changes to analytical decisions. Such transparency is essential for allowing the evidential basis of research claims to be re-examined [24]. Research ethics were maintained by clearly citing sources and translation versions, avoiding the treatment of local terms as direct equivalents without evidence, distinguishing source content from the researcher's interpretation, avoiding the selective use of evidence merely because it supported the initial argument, and documenting translation limitations and the researcher's positionality when interpreting knowledge from different cultures.

Result

1. The Spatial Existence of *Natah* as Empty Space

The literature analysis shows that *natah* presents a condition that appears simple yet is ontologically significant: it is physically empty, but within the spatial organisation of the residential compound, it has a position, dimensions, boundaries, orientation, and relationships with other buildings. Putra [25] distinguishes at least four types: *natah sanggah*, *natah bale* or *natah umah*, *natah paon*, and *natah penunggun karang*. *Natah sanggah* is located at the centre of the *sanggah*, *natah bale* at the centre of the *umah*, *natah paon* in front of the *paon*, while *natah penunggun karang* follows the location of the *penunggun karang* in the *kaja-kauh* direction. Among these forms, *natah bale* is the most physically dominant space in the residential compound. What is important to notice here is that *natah* is not simply an unnamed

emptiness between buildings. This empty space is differentiated, named, and recognised according to its position within the structure of the house.

Natah bale demonstrates this relationship most clearly. It serves as the orientation for the *sanggah, meten, bale dangin, bale delod,* and *bale dauh*, and, in certain configurations, also the *paon*. However, this relationship is not always identical. If a *natah paon* exists, for example, the *paon* is oriented towards the *natah paon* rather than the *natah bale*. The sources also document house configurations without a *bale dangin* or those that use the *natah* as the orientation for only several buildings. These variations are important because they show that the existence of *natah* does not depend on a single rigid geometric composition. What remains relatively constant is its role as a relational space that provides the separate building masses with a shared orientation.

This relationship even operates through the naming of buildings. Putra [25] states that *natah bale* serves as the reference for naming the groups of buildings surrounding it. Without the presence of *natah*, the terms *bale daja, bale dangin, bale delod,* and *bale dauh* would not acquire the same positional relationships. In other words, the question can be reversed: *what if the buildings are present but the natah is absent?* The source indicates that *natah* is not merely a space that derives meaning from buildings. Buildings also acquire their positional identities through their relationships with *natah*. The relationship is therefore reciprocal.

Another important detail concerns its dimensions. Putra [25] describes *natah* as a geometric form with measurable horizontal dimensions and an imaginary vertical dimension. Its length and width are determined by the distances between the groups of buildings surrounding it. If *natah* is bounded by the *meten, paon, bale dauh,* and *bale delod*, for example, its length is determined by the distance between the *meten* and *paon*, while its width is determined by the distance between the *bale dauh* and *bale delod*. Vertically, however, no architectural enclosure exists. The source even explains that *natah* does not require a roof because its "roof" is the sky. What is important to notice is the asymmetry of its boundaries: *natah* is horizontally bounded by architecture but vertically open to the sky. Its emptiness is therefore not a boundless space, but a space whose boundaries operate differently along the two axes.

This central position also possesses a cosmological dimension. Within the *Sanga Mandala*, *natah bale* occupies the *madyaning madya* and serves as the centre of orientation, circulation, and human activity [26]. Another source associates *natah* with *bindu*, the "zero point" of family activities, which is cosmologically linked to cosmic energy. Putra [25] also explains *natah* as a medium through which *akasa* and *pertiwi* meet, while Wijaya [27] interprets it through the *purusa-pradana* relationship and the balance between *hulu-teben, sekala-niskala*, and sacred-profane. However, these data also reveal an interesting tension: the geometric centre does not automatically represent the most sacred position. Wijaya [27] instead places *natah* in relation to the profane realm, which requires balancing through ritual. Geometric centrality, the centrality of activity, and the hierarchy of sacredness do not, therefore, always converge at a single point.

The existence of *natah* becomes increasingly concrete through its use. Children play in the *natah* while adults undertake activities in the *bale*, rice is dried there, and at different times

the same space accommodates weddings, mortuary rituals, *telu bulanan*, temporary structures for priests, and offerings. These activities do not create *natah* from the outset, but they allow a materially empty space to remain recognisable within domestic life. Even when houses undergo changes due to family growth and the tourism economy, Putra's study shows that *natah* remains among the sociocultural spaces retained for various ritual activities.

Comparison with China reveals a different form of existence for empty space. Knapp [28] describes the classical Beijing *siheyuan* as an arrangement of low-rise buildings forming a quadrangle around a courtyard. The compound is enclosed by grey brick walls, generally has a single entrance, and is organised according to cardinal orientation, bilateral symmetry, axiality, and spatial hierarchy. Each *siheyuan* has at least one courtyard at the centre of the compound, which in the Beijing type may occupy approximately 40% of the dwelling's total area. Although the exterior of the compound is enclosed by walls and has few openings, the courtyard remains open to the sky and surrounded by relatively low building masses. This condition creates a contrast between the enclosure at the dwelling's outer boundary and the openness of its interior space. Regional variations indicate that the existence of this open space does not depend on a particular proportion. Courtyards in northeastern China can be wide; those in Shanxi and Shaanxi are longer and narrower; and farther south, the proportion of open space tends to decrease. In southern dwellings, the open space may even become a *tianjing* or *sky-well*, a rectangular void that is considerably smaller and more vertical than courtyards in northern China. Despite variations in size and proportion, these dwellings continue to exhibit recurring spatial principles, including orientation, symmetry, axiality, spatial relationships with the courtyard, hierarchy, and inward-facing organisation [28]. These findings show that the existence of the Chinese courtyard cannot be determined solely by the size of the empty area, but by its position within the relationships among building masses, enclosure, orientation, and the dwelling's spatial organisation.

The literature explicitly supports the cosmological dimension of traditional Chinese dwellings. Knapp explains that house sites were traditionally selected according to a view of the cosmos that connected individuals, families, and society, while *fengshui* determined the dwelling's relationship with natural conditions, good fortune, and prosperity. He also notes that Chinese society consciously shaped space through *yin-yang* cosmology, the correlative principles of *wuxing*, and various *cosmic paradigms* [29]. At the courtyard level, studies examined in the analysed literature associate the central space with the relationship between earth and sky and the "unity of heaven and humanity," while *fengshui* governs site selection, building orientation, and gate placement [30], [31]. However, the same sources show that cosmology alone did not shape the organisation of the house. Knapp identifies *bilateral symmetry, axiality, hierarchy,* and *enclosure* as fundamental norms of traditional Chinese dwellings, while *fengshui* governs the house's position in relation to the landscape and environment. Other literature shows that the spatial hierarchy of the *siheyuan* also follows generation, age, gender, and family status, linking courtyard organisation to the Confucian social order [10], [32]. Based on this evidence, the cosmological dimension constitutes an important foundation for the formation of Chinese dwellings, but the analysed literature does not support the claim that the existence of the *siheyuan* courtyard derives from cosmology alone. It is formed through the relationships among conceptions of the cosmos, *fengshui*, family order, hierarchy, orientation, and enclosure.

India presents another way of understanding the existence of an empty centre. Several studies of courtyard houses associate the central space with the *Brahmasthan* and *Vastu Purusha Mandala*, which interpret the site through the relationship among the body, the house, and the cosmos [33], [34], [35]. However, *what is important to notice* is not simply that "India also has an empty space at the centre." Within the Vastu traditions discussed in these sources, the site itself is already understood as an ordered field before the buildings are placed. The *Manasara*, for example, describes *ground-plans* based on divisions of a site into 1, 4, 9, 16, 25, 36, 49, 64, and up to 81 plots, known as *Paramasayika*, followed by configurations containing larger numbers of plots [36]. The same text refers to offerings to Brahman, the "Spirit of the site," and deities assigned to their respective plots within the *ground-plan*. Acharya's commentary on the *Mayamata* further explains that the parts of the *Vastupurusha*'s body correspond to particular plots and that parts of the building should not violate those plots. Thus, in these textual sources, the unbuilt field does not appear as a neutral surface. Before becoming mass and void, the site is already differentiated into positions that hold specific places within an ordered system.

Then, *what happens to the empty centre?* The analysed courtyard literature positions the *Brahmasthan* as a centre that, in several Vastu traditions, remains open and serves as a reference point for the surrounding spaces [33], [34]. Bryden [33] also shows that Vastu Vidya connects the individual body to the house and the house to the cosmos through dimensions, orientation, and the direction of activities, while in the Rajasthani *haveli*, the microcosm-macrocosm relationship is interpreted through three archetypal levels: earth, humanity, and heaven. What is important to notice here is that emptiness does not necessarily mean an unassigned part of the house. In this interpretation of Vastu, the centre may remain unbuilt precisely because it already occupies a position within the organisation of the site. However, the comparative literature findings also establish an important limitation: the relationship between the courtyard and the *Brahmasthan* cannot be applied to all traditional Indian houses. The data encompass the Rajasthani *haveli*, Gujarati *pol house*, Tamil Nadu *agraharam*, Kerala *nalukettu*, and Maharashtrian *wada*, which display different regional configurations, while Bafna [37] questions the evidence that the mandala always functions as a direct generator of architectural form. Therefore, the ontologically defensible finding is not that "the Indian courtyard is the *Brahmasthan*," but that, in several traditions interpreted through Vastu, the empty centre may acquire existence because it already occupies a position within the order of the site before being filled by building masses.

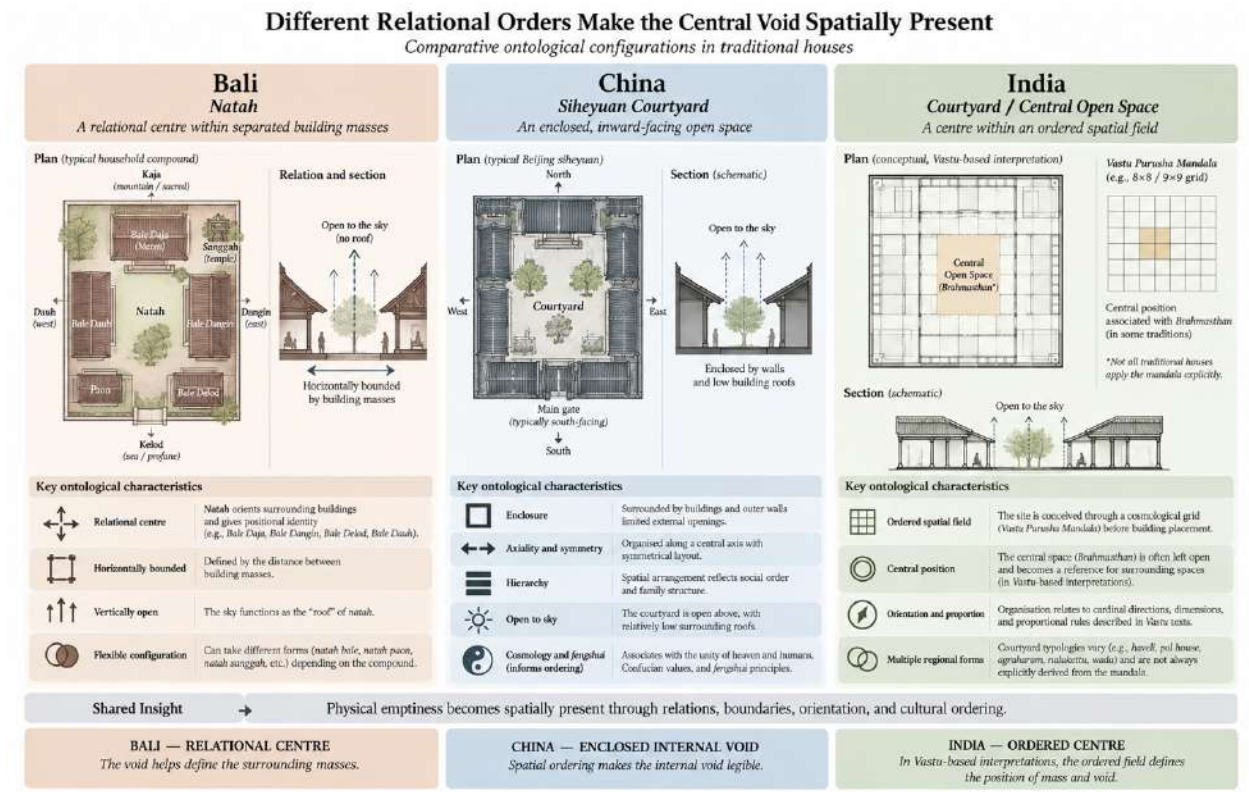


Figure 1. Ontological Configurations of The Central Void in Balinese, Chinese, and Selected Indian Traditional Houses

These differences are summarised in Figure 1. The diagram does not equate *natah*, the *siheyuan* courtyard, and the central space in Indian traditions as identical forms. Instead, it illustrates the different ways in which emptiness becomes present as space. In Bali, *natah* operates as a relational centre: building masses define it horizontally, while *natah* provides orientation and positional identity to the surrounding buildings; vertically, the space remains open to the sky. In the *siheyuan*, the courtyard becomes legible through enclosure, axiality, symmetry, hierarchy, and inward orientation, while retaining its vertical openness. In several Vastu-based interpretations in India, this relationship operates differently because the empty centre occupies a position within a site that already possesses a spatial order. Thus, Figure 1 shows that the similarity among the three lies in the existence of the void as an active component of residential organisation, whereas the relational foundations that bring the void into existence differ.

2. Knowledge Systems That Shape and Regulate *Natah*

The analysis shows that *natah* is shaped through a system of knowledge that regulates the position, dimensions, orientation, and relationships among the components of the house. In the Balinese tradition, this knowledge is primarily recorded in the *Asta Kosala Kosali*, *Asta Kosala*, and *Asta Bumi*, and is subsequently applied by the *undagi* throughout the planning and construction process. The *Asta Kosala Kosali* contains rules concerning *sikut*, spatial layout, building positions, distances between buildings, materials, entrance placement, and the performance of ceremonies before, during, and after construction [38]. Thus, *natah* does not

emerge only after the buildings have been positioned, but forms part of the knowledge that determines the organisation of the residential compound.

The role of the *undagi* is important because the application of these rules does not end with the texts. Dharmakarma [38] explains that an *undagi* must understand the dimensions of each *bale*, pillars, boundaries, *kori*, distances between buildings, and the positions of *parahyangan* and *pawongan*. This knowledge also encompasses the positions of buildings and *natah* as components of an interdependent arrangement. The *sikut* system is applied to the *bale*, door openings, pillars, *kori*, *jineng*, *bebataran*, and even *natah*. This indicates that empty space is governed by rules, just as building masses have prescribed dimensions and positions. Such spatial knowledge is transmitted through texts and the practices of the *undagi*, allowing spatial rules to operate as both written knowledge and building expertise.

Orientation also constitutes an important aspect of the formation of *natah*. The *Asta Kosala Kosali* associates directions with the positions of deities, while the *Sanga Mandala* divides space according to the gradations of *utama*, *madya*, and *nista*. These nine zones possess different degrees of sacredness and profanity and guide the organisation of traditional Balinese houses [38]. Because buildings are positioned according to direction, function, and degree of sacredness, the position of *natah* is also formed through its relationship with this arrangement. In other words, knowledge of *natah* forms part of the rules governing the entire residential compound, rather than a set of rules concerning the courtyard in isolation.

In traditional Chinese houses, the courtyard is also produced through a body of knowledge that regulates relationships among the components of the dwelling. Knapp [28] identifies four principal norms: *bilateral symmetry, axiality, hierarchy,* and *enclosure*. *Fengshui* also determines the placement of the house, its relationship with the landscape, its orientation, and its spatial arrangement. In the *siheyuan*, the principal building is generally located on the northern side and faces south, while the gate, walls, courtyard, and spatial sequence establish graduated levels of privacy from the exterior towards the innermost area. Thus, the Chinese courtyard is formed through a combination of rules concerning orientation, family hierarchy, enclosure, and access regulation.

The Indian tradition presents a system that is more explicitly codified in architectural texts. Vastu Shastra employs the *Vastu Purusha Mandala* as a grid for determining orientation, site division, proportions, and the relationship between open and enclosed areas [33], [35]. The courtyard is associated with the *Brahmasthan*, the central part that serves as a reference for organising the surrounding spaces [34]. The *Manasara* demonstrates the extensive nature of this codification through rules concerning site selection, orientation, *site plans*, *courts*, the positions and dimensions of dwelling houses, *gate-houses*, and *doorways* [36].

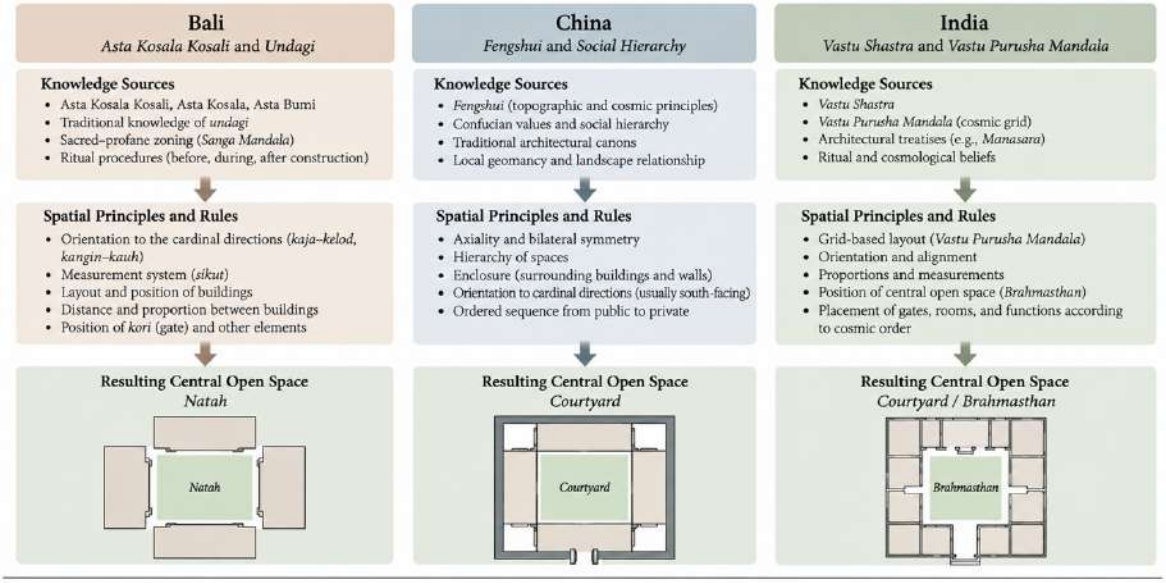


Figure 2. Knowledge Systems and Spatial Principles that Produce The Central Open Space in Balinese, Chinese, and Indian Traditional Houses

The relationship between knowledge systems and the formation of empty space across the three traditions is summarised in Figure 2. The diagram shows that *natah*, the courtyard, and the *Brahmasthan* are not formed in the absence of rules, but are produced through bodies of knowledge that determine orientation, position, dimensions, and relationships among the components of the house. In Bali, these rules operate through the *Asta Kosala Kosali*, the *sikut* system, orientation, and the knowledge of the *undagi*. In China, courtyard formation is associated with *fengshui*, social hierarchy, axiality, symmetry, and enclosure. In India, Vastu Shastra and the *Vastu Purusha Mandala* regulate the site through grids, orientation, proportions, and the position of the central space. Figure 2 thus illustrates the different sources and bodies of knowledge that produce empty space in each tradition.

This comparison shows that empty space in all three traditions is produced through systems of knowledge rather than through the absence of construction. Bali shapes *natah* through the *Asta Kosala Kosali*, orientation, *sikut*, spatial layout, and the practices of the *undagi*; China through *fengshui*, axiality, symmetry, hierarchy, and enclosure; and India through Vastu, the *Vastu Purusha Mandala*, measurement, and rules governing sites and dwellings. The traditions differ in the foundations and instruments that regulate empty space, but share one principle: emptiness is planned, assigned a position, and transmitted through cultural knowledge.

3. Values That Sustain *Natah* in Balinese Domestic Life

If *natah* is physically no more than an open area, *what if* this space is removed while the buildings remain? The literature analysis shows that what would disappear is not merely a courtyard, but a setting for various practices that connect domestic, social, ritual, environmental, and cosmological life. Putra [25] categorises the roles of *natah* into social, ritual, and environmental functions, while Wijaya [27] identifies ritual, social, and safety dimensions. An examination of other sources shows that these categories are interconnected. The value of *natah* arises because the same space can be used repeatedly for different purposes

without losing its position as the centre of the residential compound. In daily life, this relationship appears in ordinary activities. Occupants move among the *paon, teba, jineng, bale,* and *natah* as part of their domestic routines. Rice taken from the *jineng* can be dried in the *natah*. Children play there while women converse from the *bale* or beneath a tree, and men move among the residential compound, *teba,* and working spaces. The literature emphasises that the occupants' repeated movements bind the spaces of the house into a single system of domestic life. Therefore, *natah* is valuable not because of one particular activity, but because it provides a space capable of accommodating changing activities within the rhythms of everyday life.

How about when everyday life shifts into ceremony? The same space acquires different uses without changing its form. *Natah* is used for mortuary rituals, weddings, and *telu bulanan*, and can accommodate temporary structures for priests and places for offerings. The *bale dangin, bale daja, merajan, teba,* and *natah* then operate together according to the stages of the ceremony. Other sources identify *Bhuta Yadnya, Manusa Yadnya,* and *Pitra Yadnya* as rituals associated with *natah* [25]. Interestingly, ritual does not always transform *natah* into an entirely sacred space. Wijaya [27] places *natah* within the *nista* or secular realm, yet this is precisely where *pecaruan* takes place to neutralise negative elements and maintain the sacred-profane balance. This detail shows that the ritual value of *natah* does not depend on a fixed sacred status, but on its capacity to provide a setting for processes of balancing.

The value of *natah* is also evident in its cosmological and environmental relationships. Referring to Putra [25], Wijaya [27] cosmologically explains *natah* as a meeting space between *akasa* (sky) and *pertiwi* (earth). Other literature associates *natah* with harmony between the microcosm and macrocosm and the encounter between *purusa* and *pradana* [25], [39]. These cosmological values coexist with tangible environmental benefits. Referring to Putra [25], Yudantini and Aritama [40] note that the openness of *natah* facilitates the entry of sunlight and fresh air, thereby supporting air circulation throughout the domestic environment. Wijaya [27] identifies another practical function by positioning *natah* as an assembly point during earthquakes because the building masses and their exits are oriented towards this space. These findings show that the literature identifies cosmological values as well as environmental and safety benefits within the same space.

The Chinese findings reveal a different structure of values. Literature on the *siheyuan* associates the courtyard with family life, Confucian hierarchy, ritual, privacy, and cosmological order [7], [9], [41], [42]. Its spatial organisation differentiates occupants according to generation, age, gender, and status. The principal building on the northern side (*zhengfang*) is occupied by the senior generation, while other sections are allocated according to each family member's position [9], [10]. The arrangement from the gate towards the innermost area also produces *graduated privacy*. Knapp explains that temporary visitors may be received in the entrance area, friends and relatives may enter the courtyard and its surrounding spaces, while the deeper sections constitute the family's private domain. The sequence of gates, walls, courtyards, and interior spaces thus creates a gradual transition from the public to the private realm [28].

However, the value of the courtyard extends beyond hierarchy and privacy. In Mei Lanfang's *siheyuan*, Knapp notes that tables and chairs from the surrounding rooms were commonly moved into the courtyard so that family members and guests could enjoy sunny days and tranquil evenings. Movement between buildings also occurred directly across the courtyard when weather conditions permitted because the surrounding buildings stood separately and were not connected by internal doors [28]. More recent studies demonstrate the continuation of these everyday functions in different forms. Communal courtyards are used for washing, drying clothes, children's play, and interaction among neighbours. The same space thus brings together private needs and communal life [9], [41], [43].

Regional variation adds an environmental dimension to this structure of values. Farther south of Henan, courtyard open spaces tend to narrow until they form the *tianjing* or *skywell*. Citing Shixian [44], Knapp notes that this form helps limit direct solar radiation while supporting ventilation in regions with climatic conditions that differ from those of northern China. These findings show that the value of the Chinese courtyard does not derive from a single function, but from its capacity to connect family order, hierarchy, privacy, ritual, everyday life, and environmental responsiveness within the same spatial configuration.

India presents a structure of values that varies across regional traditions. Several studies position the courtyard as the *Brahmasthan*, an open centre that organises the surrounding spaces and connects the house to a cosmological order through Vastu [33], [34]. Religious values also appear in everyday practices. In Hindu houses, daily rituals may take place around a *Tulsi* plant in the courtyard, while in the *pol house* of Ahmedabad, the courtyard is understood as a place associated with Brahma and the occupants' relationship with supernatural forces [3], [45]. In the Rajasthani *haveli*, three archetypal levels, earth, humanity, and heaven, connect the microcosm with the macrocosm, while the courtyard's openness to the sky allows the house to "breathe" [33]. The courtyard also regulates social relationships. In the *haveli* and similar typologies, this space mediates between interior and exterior domains and enables social participation while maintaining gender segregation and privacy [33], [45], [46]. A more layered pattern appears in the *agraharam* of South India. Several courtyards create a transition from the public to the private realm, with the degree of interiority increasing as a person moves farther into the house. The courtyard in the residential section retains a welcoming character, whereas the courtyard in the service section feels more private [47].

This comparison demonstrates that the value of empty space does not derive from a single function. *Natah* brings together everyday life, ritual, social relations, cosmology, environmental functions, and even safety within the same space. The Chinese courtyard connects family life with hierarchy, privacy, ritual, and social order, while the Indian courtyard links domestic life with ritual, the cosmos, gender, family, and privacy. Contemporary Balinese findings also reveal pressures on these relationships: housing and economic demands have transformed some *natah* and *teba* into buildings or tourism accommodation, while some members of the younger generation still consider these traditional open spaces important to preserve. The question, therefore, is not only *what if natah changes its shape?*, but also *what if the practices that make natah necessary disappear?* Based on the overall findings, the

continuity of *natah* depends on the continuity of the values and practices that make this empty space necessary, rather than solely on the preservation of its physical form.

The structure of values identified across the three traditions is summarised in Figure 3. The diagram shows that empty space derives its value from multiple practices and beliefs operating simultaneously. In Bali, *natah* brings together ritual, social, domestic, cosmological, environmental, and safety values. In China, the courtyard is associated with family life, hierarchy, privacy, ritual, cosmology, and environmental adaptation. India presents a more regionally diverse structure, with courtyards connecting ritual, cosmology, family, domestic life, gender and privacy, and environmental responsiveness. In several traditions influenced by Vastu, the central space may also be associated with the *Brahmasthan*. Figure 3 shows that the continuity of empty space across the three traditions is linked to the continuity of the values and practices that keep the space necessary.

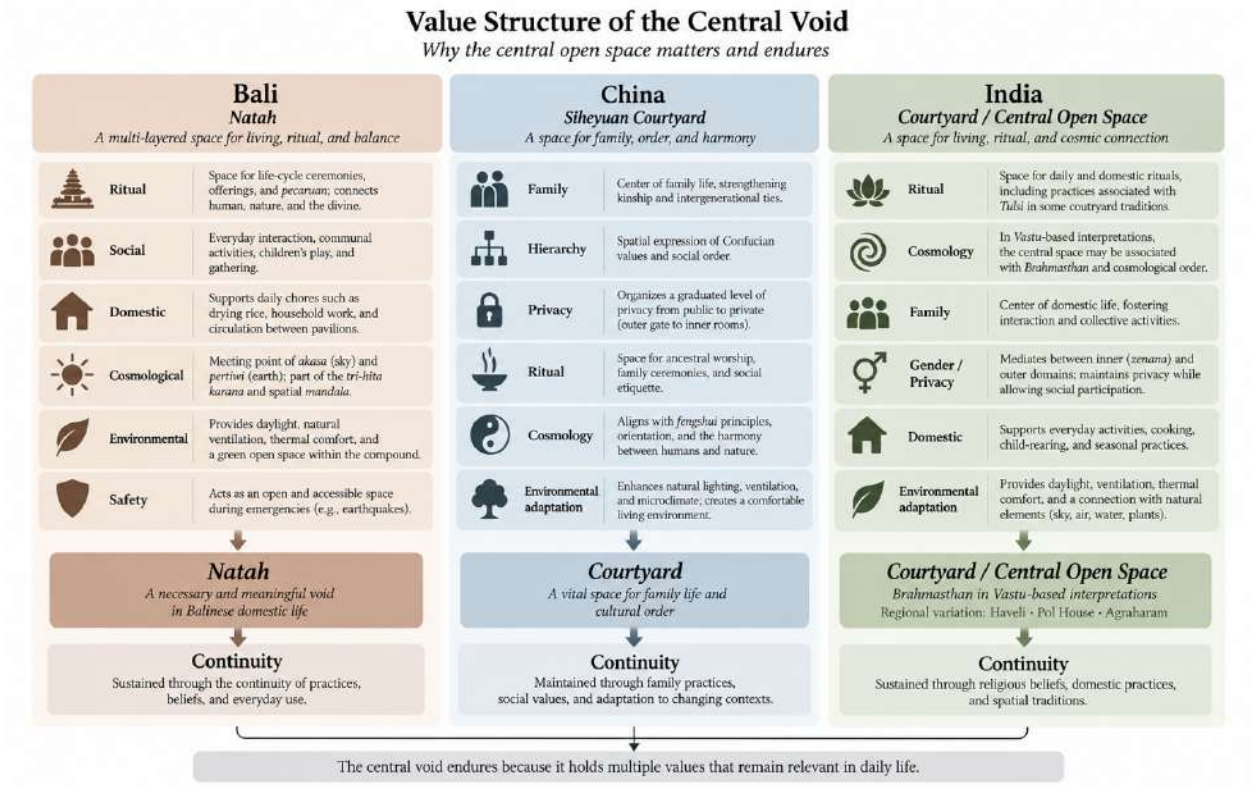


Figure 3. Value Structure of The Central Void in Balinese, Chinese, and Indian Traditional Houses

Figure 3 reveals a consistent pattern: the continuity of empty space is related to its capacity to accommodate values that remain relevant to the lives of its occupants. However, these structures of value are not identical. The Chinese courtyard is strongly associated with family, hierarchy, privacy, and social order, while Indian courtyard traditions display regional variations in the relationships among ritual, cosmology, domestic life, gender, and privacy. *Natah* exhibits a different character because the same space can shift from a setting for daily activities to a ritual space, a social space, an environmental regulator, and even an assembly point during earthquakes without losing its position as the centre of the residential compound. Findings concerning the transformation of *natah* and *teba* in response to housing and economic

demands also indicate that preserving their open form alone does not necessarily preserve all the values embedded within them. Based on this pattern, the continuity of *natah* depends on the continuity of the values and practices that make this empty space necessary, rather than solely on the preservation of its physical form.

Discussion

1. When Is a Courtyard Still a Courtyard? Kesamaan Bentuk dan Perbedaan Cara Ruang Menjadi Ada

At first glance, the Balinese *natah*, the Chinese *siheyuan*, and several courtyard houses in India provide sufficient grounds for placing them within the same typological family. All three contain open spaces related to the surrounding building masses, remain open to the sky, and play roles in domestic life. This interpretation has a strong basis in the literature. Zhang [1], for example, demonstrates the extensive distribution of courtyard houses across six cultures and identifies recurring themes of orientation, cosmological symbolism, socio-spatial organisation, and cultural activities. Gupta and Joshi [34] also describe the courtyard as a holistic space capable of addressing cultural, anthropological, and climatic needs, although its characteristics vary across regional contexts. Within this framework, *natah* can indeed be recognised as part of the broader courtyard family. However, the findings of this study require us to pause over the word "same." What exactly is the sameness that we are seeing? If this similarity primarily consists of an empty space at the centre of a building arrangement, only the morphology may be the same. The ways in which empty space acquires existence differ. In *natah*, separate buildings acquire positional identities through their relationships with the *natah*. *Bale daja, bale dangin, bale delod,* and *bale dauh* do not merely surround an empty area. These names indicate directional relationships through which the *natah* and the *bale* mutually define their positions. In the *siheyuan*, the legibility of the courtyard is shaped more strongly by enclosure, axiality, bilateral symmetry, inward orientation, and spatial hierarchy. In several Indian traditions interpreted through Vastu, the centre acquires its position through a site that has already been divided and assigned spatial positions before the buildings are placed. All three produce an open centre, but that centre does not "become space" through identical mechanisms.

This is where the category of the courtyard begins to encounter its conceptual limits. These limits do not mean that the term *courtyard* should be rejected. The term remains useful at the typological level because it enables cross-cultural comparison. The problem arises when typological similarity is considered sufficient to explain spatial conceptions. Global courtyard research itself has begun to move in this direction. Studies of the *siheyuan* show that spatial configuration is associated with hierarchy and privacy, meaning that form cannot be separated from the social structures operating within it [7]. Through their interpretation of the *Guanzhong Narrow Courtyard*, Liu and Ning [48] even shift attention from material symbols to the relationship between domestic space and sociocultural construction. Research on courtyard houses in Yazd offers another caution: several assumptions concerning the stability of courtyard numbers, topological relationships, and social or climatic influences must be tested historically rather than accepted as fixed attributes of a typology [49]. These findings alter the comparative question of this study. The question no longer ends with "Is *natah* a courtyard?"

Morphologically, the answer may tend towards yes. A more productive question is: what do we fail to see when *natah* is understood only as a courtyard? What risks being overlooked is the way *natah* exists as space through relationships. Its emptiness has a name, dimensions, orientation, horizontal boundaries, vertical openness, and reciprocal relationships with the masses surrounding it. In this sense, the term *relational void* can be proposed as an analytical concept for interpreting *natah*. This term is not a local Balinese expression and is not intended to replace the word *natah*. It explains the finding that the emptiness of *natah* acquires existence through relationships that allow the components of the residential compound to be recognised, oriented, used, and connected.

Interestingly, the idea that the *void* is not identical to absence also appears beyond Bali. Farjami [5] shows that *emptiness* in Iranian architecture has philosophical roots and can manifest as a *central courtyard*. In the Chinese context, Liu [50] interprets traditional spatial thought as correlative thinking that emphasises relationships among elements, including the interplay between *void* and *solid* in courtyard architecture. These two studies do not prove that *natah* shares the same ontology as empty space in Iran or China. Instead, they strengthen the grounds for questioning the assumption that empty space can be adequately understood through the geometry of an unbuilt area. A more fundamental philosophical question then arises: must emptiness be understood through what is absent, or through the relationships that become possible because something is left empty? The data on *natah* point towards the second possibility. Emptiness is not a lack of matter waiting to be filled. It is a condition that allows the *bale* to remain separate yet connected, activities to change without requiring new spaces, and earth and sky to maintain a vertical relationship at the centre of the residential compound. From this perspective, the comparison among Bali, China, and India produces an important distinction: shared morphology does not necessarily mean shared spatial ontology. The *central void* can provide common ground among the three, but it cannot by itself explain what makes the centre exist as space.

2. If the Form Is Similar, Is the Knowledge Behind It Also Similar?

The differences become clearer when attention shifts from visible form to the knowledge that makes that form possible. In Bali, *natah* forms part of the residential compound order governed by the *Asta Kosala Kosali*, the *sikut* system, orientation, building placement, and the practices of the *undagi*. In China, the courtyard emerges through the intersection of orientation, *fengshui*, axiality, symmetry, enclosure, family hierarchy, and access regulation. In the Indian traditions examined in this study, Vastu Shastra, the *Vastu Purusha Mandala*, site measurement, orientation, and positional divisions provide another set of instruments for organising the centre and the buildings surrounding it. Similar spatial outcomes therefore conceal different ways of knowing space.

This raises a question that rarely emerges when courtyards are compared primarily through floor plans: if three cultures produce a central void, are they actually producing the same spatial knowledge? The findings of this study indicate that the answer must be qualified. The *Asta Kosala Kosali*, *fengshui*, and Vastu cannot be treated as three versions of the same system simply because all three regulate orientation and spatial layout. Such an approach would instead flatten the epistemological differences that the analysis seeks to identify. In Bali,

measurement can extend to the body, *sikut*, distances between *bale*, *kori*, *bebataran*, and *natah*, and is then realised through the competence of the *undagi*. In China, spatial rules relate to cosmological orientation as well as family order and degrees of privacy. In India, Vastu texts provide highly structured site divisions, but regional variations in houses caution against treating these texts as a single blueprint for all Indian domestic architecture.

This difference is important because courtyard studies often begin with what can be observed after a house has been built: dimensions, ratios, orientation, degree of enclosure, connectivity, lighting, ventilation, or activity patterns. This approach is valid and has produced important knowledge. However, it primarily answers the question: how does the courtyard perform? This study introduces a prior question: how did a culture know that this emptiness should be there in the first place? This subtle shift has significant consequences. Empty space is then interpreted not as a residual outcome of arranging building masses, but as the result of decisions that can be traced through texts, rules, building expertise, orientation, customs, and social practices.

At this point, the theory of the production of space becomes relevant without needing to be imposed as a framework that dominates the data. Engaging with Lefebvre [51], Liu and Ning [48] show that domestic space can be interpreted as part of a process of sociocultural construction rather than merely as a material object. The findings of this study align with this argument on one important point: *natah*, the *siheyuan*, and Indian courtyards are indeed culturally produced. However, this comparison requires an additional step. If space is socially produced, we must then ask: produced through whose knowledge, by what rules, and according to which conception of order? Without these questions, the "production of space" may still make distinct traditions appear excessively similar.

Therefore, the more productive debate is not between "traditional" and "modern" or between "cosmological" and "functional." The issue concerns the relationship between form and knowing. A courtyard can be geometrically replicated without reproducing the knowledge that once made it meaningful. Conversely, certain principles may persist even when its dimensions change. This is where the study adopts a position that differs from interpretations of the courtyard as a package of forms transferable to contemporary design. The literature demonstrates the potential of courtyards to meet contemporary social, cultural, and climatic needs [34], but the findings of this study call for caution: what exactly are we transferring when we "preserve" or "adapt" a courtyard? If only the empty centre and surrounding buildings are transferred, the form may have been preserved while the cultural understanding of why that centre should remain empty has been lost.

Natah makes this issue particularly clear. It cannot be fully separated from the relationships among texts, *sikut*, orientation, the *undagi*, construction rituals, the positions of the *bale*, and the use of the residential compound. Knowledge of *natah*, therefore, resides neither solely in texts nor entirely in architectural form. It emerges through the relationship between rules and building practices. At this point, comparison with China and India becomes productive: all three show that the *void* can be planned, but the reasons, knowledge authorities, and instruments that enable it to be planned differ. Perhaps the more useful comparative unit is therefore not the courtyard as form, but the cultural process through which emptiness becomes spatial order.

3. What Remains When the Courtyard Remains? Nilai, Praktik, dan Persoalan Keberlanjutan

The final layer shifts the debate from existence and knowledge to value. The findings reveal something seemingly simple but highly consequential: all three traditions retain empty space because it continues to be needed. What differs is what makes it necessary. *Natah* accommodates domestic life, movement between buildings, the drying of agricultural produce, children's play, social interaction, wedding and mortuary ceremonies, *telu bulanan*, *pecaruan*, cosmological relationships, ventilation, lighting, and even its function as an assembly point during earthquakes. The *siheyuan* brings family life together with hierarchy, privacy, ritual, social interaction, and climatic responsiveness. Indian courtyards display broader variations, including domestic rituals, cosmological relationships, gender, privacy, the reception of guests, family life, and environmental control.

These similarities support global literature that rejects reducing the courtyard to a climatic device. Gupta and Joshi [34] find that environmental and sociocultural dimensions operate together within the courtyard typology. Huang, Chiou, and Li [7] show that changes in *siheyuan* houses involve relationships among morphology, behaviour, and cultural values. In other contexts, studies of traditional courtyards also demonstrate that these spaces cannot be explained solely through thermal performance because social organisation, privacy, and culture also shape their existence. In other words, the courtyard persists not because of a single universal function, but because it can accommodate various needs within one spatial configuration. Yet this raises a more troubling question: what if the courtyard survives, but the reasons for keeping it disappear? Evidence from Tamil Nadu provides a relevant case. Vedhajanani and Amirtham [52] found that in transformed vernacular courtyard houses, cultural relationships with the courtyard can weaken or disappear substantially even when some climatic and spatial relationships remain. The physical existence of a courtyard, therefore, does not guarantee the continuity of its entire system of meaning. This finding directly resonates with the condition of *natah* discussed in the Results section, where pressures arising from housing and economic needs have transformed some *natah* and *teba*, while some members of the younger generation still consider their traditional values important.

What, then, must we reconsider about preservation? If a *natah* is retained as an empty area but no longer serves as a reference for relationships among the *bale*, is no longer understood through the spatial knowledge that shaped it, and is no longer required by social or ritual practices, caution is necessary before describing this condition as the complete continuity of *natah*. Conversely, changes in dimensions or physical adjustments do not automatically mean that the entire logic of *natah* has disappeared if the relationships of orientation, practices, knowledge, and values that make the space necessary continue to operate. This is not a reason to disregard material authenticity. It is a reason to broaden its meaning.

This debate also corrects the tendency to seek a single "essence of the courtyard" that applies universally. Zhang [53] productively presents the courtyard as a cross-cultural heritage and identifies themes that extend across many societies. This study accepts the possibility of such a shared spatial family, but differs in one important respect: cross-cultural similarities should be situated at the appropriate level. What can be considered shared is the *central open space as a recurring spatial strategy*. Beyond that point, the differences must be restored. What

brings the central space into existence, how its existence is known, who regulates its use, and why communities preserve it cannot be inferred from morphology alone.

From this perspective, *natah* acquires a clearer position within the global debate on courtyards. This study does not need to prove that *natah* is entirely unique. Such a claim would be difficult to sustain because socially, ritually, and environmentally active central spaces occur across many cultures. Its contribution lies in a more specific point: *natah* reveals the limits of the courtyard as an explanatory category when that category stops at similarities of form and function. Through *natah*, emptiness can be interpreted as relational space whose existence is jointly shaped by position, orientation, building masses, building knowledge, everyday practices, rituals, and values. Comparison with China and India is necessary not to suggest that one is more complex than the others, but to demonstrate that similar empty-centre forms can result from different ways of understanding space.

Thus, the final question of this study may not be "What is a courtyard?" A more incisive question is, "What makes a void become a meaningful space in a particular culture?" The first question primarily directs attention to type, form, and characteristics. The second leads to the existence, knowledge, practices, and values that make emptiness necessary. At this point, *natah* makes a conceptual contribution to courtyard discourse: the central void may be shared, but the relationships that make it spatially meaningful are culturally constituted. Cross-cultural courtyard studies must therefore move beyond comparisons of form towards comparisons of the ways communities transform emptiness into space.

Conclusion

This study demonstrates that the morphological similarity of an open space at the centre of a dwelling does not automatically indicate that the space is understood, formed, and valued in the same way. *Natah*, Chinese courtyards, and Indian courtyards all show that emptiness is not merely an unbuilt part of a site but acquires existence through its relationships with surrounding spaces, the systems of knowledge that regulate it, and the practices that make it necessary. However, the mechanisms that constitute this existence differ. *Natah* primarily exists as a relational centre that provides orientation and positional identity to the surrounding building masses. It is shaped through knowledge of *sikut*, orientation, spatial layout, and the practices of the *undagi*, and sustained through domestic, social, ritual, cosmological, environmental, and safety-related practices. Chinese courtyards are more strongly associated with enclosure, axiality, family hierarchy, privacy, and social order, while Indian traditions display regional variations, including relationships between the central space and Vastu, orientation, ritual, cosmology, gender, and privacy. These findings answer and sharpen the issue raised at the beginning of the study: *natah* can be placed within the typological family of courtyards based on its spatial similarities, but this category does not fully explain how *natah* becomes space. Cross-cultural comparisons of empty space must therefore move beyond questions of formal similarity towards the mechanisms through which emptiness acquires existence, knowledge, and value within a particular culture.

Theoretically, this study proposes ontological, epistemological, and axiological readings as a comparative framework for distinguishing morphological similarity from conceptual similarity

and positioning *natah* within courtyard and void discourse without treating it as identical to other traditions of empty space. Practically, the findings show that conserving or adapting *natah* cannot be limited to preserving its open area, but must also consider spatial relationships, orientation, the knowledge that shapes it, and the social and ritual practices that keep this emptiness meaningful. Nevertheless, this study is based on a literature review and document analysis, meaning that the comparison depends on the scope, period, terminology, and depth of the available sources. Regional diversity in China and particularly India also prevents all courtyard traditions from being represented through a single uniform model, while changes in the meaning of *natah* within contemporary Balinese life have not been directly examined through occupants' experiences. Future research should therefore test this framework through comparative field studies, documentation of spatial configurations, observation of practices, and interviews with occupants and traditional practitioners. This direction is important for determining whether changes in form are always accompanied by changes in knowledge and values, or whether *natah* may undergo material transformation while retaining the relational principles that make it meaningful.

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