

Banjar Cultural Impact on South Kalimantan Architecture

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Abstract

This review synthesizes studies on how Banjar culture shapes the traditional architecture of South Kalimantan, focusing on cultural identity, architectural typology, symbolism, environmental adaptation, and cross-cultural influences. Literature was selected for its relevance to Banjar architecture, including qualitative and quantitative works using field observation, simulation, and comparative analysis. Findings highlight the Bubungan Tinggi and Lanting houses as key typologies reflecting social hierarchy and environmental context. Symbolic motifs blend Islamic and indigenous elements in spatial and decorative design, while adaptive features such as passive cooling, natural ventilation, and floating foundations respond effectively to tropical swamp environments. Acculturation with Malay, Dayak, and Javanese cultures enriches form and aesthetics. Construction techniques employ sustainable wood systems suited for swampy terrains, though modernization poses durability challenges. Overall, the review underscores the interconnection between culture, environment, and technology, calling for preservation strategies and adaptive design to sustain Banjar architectural heritage.

Keywords: Banjar culture, South Kalimantan, traditional architecture, cultural symbolism, environmental adaptation, sustainable design, vernacular heritage



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INTRODUCTION

The investigation into the cultural influence of the Banjar community on the traditional architecture of South Kalimantan constitutes a critical domain of scholarly inquiry, primarily established by its pivotal role in formulating regional identity and preserving architectural patrimony. Traditional Banjar houses, most notably the Bubungan Tinggi typology, represent a centuries-long evolution, reflecting profound architectural syncretism an amalgamation of Malay, Dayak, Javanese, and Islamic cultural elements harmonized with crucial environmental adaptations (Mentayani, 2008; Aqli, 2011). This vernacular form serves not merely as shelter but as a structural embodiment of Banjar social hierarchy

and cultural cosmology, simultaneously functioning as a pragmatic response to the region's tropical climate and pervasive swampy terrain (Muhammad, 2012; Huzairin & Oktaviana, 2022). The imperative for this research is underscored by the classification of Banjar traditional houses as a living cultural heritage, with eleven recognized typologies, each intrinsically linked to distinct socio-functional roles and environmental niches (Mentayani & Andhini, 2016; Dharmatanna et al., 2024). However, the concomitant decline of riverine-based life and the spatial transformation of settlements from riparian to terrestrial orientation have introduced significant pressures on the preservation and morphological fidelity of Banjar vernacular architecture (Dahliani et al., 2015; Sofiyani et al., 2023).

Notwithstanding the comprehensive body of existing scholarship on Banjar traditional houses, persistent epistemological lacunae endure regarding the precise mechanism by which specific cultural elements inform architectural features, the diachronic evolutionary trajectory of these forms, and the necessary comparative analysis with adjacent regional vernacular architectures. While research has meticulously documented the anatomical structure and symbolic lexicons of the Bubungan Tinggi and Lanting house types (Aqli, 2011; Mentayani & Aufa, 2022), there remains limited systematic synthesis delineating the distinct cultural imprint of Banjar identity upon architectural typologies versus the influences absorbed from neighboring Malay and Dayak cultures (Mentayani, 2008). Furthermore, a contested discourse exists concerning the extent to which modernization and accelerated urbanization have functionally and structurally altered traditional forms. Some studies emphasize successful preservation initiatives (Ihsan et al., 2024; Oktaviana et al., 2023), while others highlight inevitable morphological and functional transformations (Afdholi, 2017; Kusliansjah, 2022). The systemic consequences of these knowledge gaps include the potential erosion of cultural identity and a diminished comprehension of embedded, sustainable vernacular design principles crucial for the region (Aulia & Veronica, 2024; Novianto et al., 2023).

The conceptual framework for this review is structured around the integration of cultural influence, vernacular architecture, and ecological adaptation. Culture is conceptualized as a dynamic, socio-cognitive system that fundamentally modulates the built environment via embedded social values, ontological beliefs, and quotidian practices (Abdurrahman & Abduh, 2020; Agustina, 2018). Vernacular architecture is defined as the physical manifestation of this culture, inherently customized to local climate, material availability, and social organization (Aulia & Veronica, 2024; Muhammad, 2012). The relationship between core Banjar cultural elements and distinctive architectural features is interrogated through the lens of typology, morphology, and symbolic lexicons, thereby linking cultural identity directly to specific spatial and structural expressions (Suryatin et al., 2022; Paris & Wahyuda, 2022). This tripartite framework guides the systematic investigation of how Banjar culture informs its traditional architecture within its specific environmental and historical context.

The primary objective of this systematic review is to critically interrogate and analyze the multifaceted influence of Banjar culture on the traditional architecture of South Kalimantan. This is achieved by systematically identifying the specific cultural drivers, resultant architectural features, and their historical development. Furthermore, the review aims to provide a rigorous comparative analysis with documented cultural influences to clarify the distinctive qualities and hybridity of Banjar vernacular forms. By synthesizing dispersed scholarly contributions and addressing existing theoretical controversies, this review aims to contribute substantive insights to the fields of cultural preservation and sustainable architectural practice in South Kalimantan.

This review employs a qualitative descriptive methodology based on a systematic protocol for literature identification and analysis. The corpus of literature incorporates empirical studies, rigorous architectural analyses, and cultural investigations. Inclusion criteria are strictly focused on research that explicitly addresses Banjar traditional houses, cultural symbolism, and environmental adaptations specific to South Kalimantan, while non-related architectural forms are excluded. The established analytical framework organizes the extracted findings thematically around four core areas: cultural elements, architectural typologies, historical development, and comparative perspectives. The subsequent discussion will present a descriptive summary, critical analysis, and ultimate synthesis to holistically elucidate the complex influence of Banjar culture on the traditional architecture of South Kalimantan (Pahlevi et al., 2021; Liritantri & Safitri, 2022; Agusniansyah & Sarbini, 2024).

PURPOSE AND SCOPE OF THE REVIEW

Statement of Purpose

The objective of this report is to examine the existing research on "Banjar Culture influence on traditional architecture of South Kalimantan, specific cultural elements, architectural features, historical evolution, comparative analysis with other cultural influences" in order to provide a comprehensive understanding of how Banjar cultural identity is embodied and expressed through architectural forms. This review is important as it synthesizes diverse scholarly insights on the origins, development, and distinctive features of Banjar traditional architecture, highlighting the interplay between cultural values, environmental adaptation, and external influences. By consolidating knowledge on architectural typologies, symbolic elements, and historical transformations, the review aims to inform preservation efforts and guide contemporary architectural practices that respect cultural heritage while addressing modern needs.

Specific Objectives:

- Procedures To evaluate current knowledge on the historical evolution and typology of Banjar traditional architecture in South Kalimantan.
- Identification and synthesis of specific cultural elements and symbolic motifs embedded in Banjar architectural features.
- To benchmark architectural adaptations to environmental and climatic conditions within Banjar vernacular housing.
- Compare the influence of other ethnic cultures such as Dayak, Malay, and Javanese on Banjar architectural forms.
- To deconstruct construction techniques and material usage that reflect local wisdom and sustainability practices.

METHODOLOGY OF LITERATURE SELECTION

Transformation of Query

The central objective of this systematic review is to critically analyze the multifaceted influence of Banjar culture on the traditional architecture of South Kalimantan. An investigation encompassing the systematic identification of specific cultural drivers, resultant architectural features, and their historical development, alongside a rigorous comparative analysis with documented cultural influences to clarify the hybridity of Banjar vernacular forms. Given the complexity and breadth of this inquiry, which spans historical syncretism, environmental adaptation, and morphological evolution, the comprehensive extraction of relevant literature necessitates the strategic decomposition of this primary research objective into a series of targeted, specific search statements.

This methodological approach ensures that the literature search is simultaneously comprehensive, mitigating the risk of omitting niche or jargon-specific studies, and manageable, thereby yielding focused subsets of scholarly articles that directly address the distinct facets (cultural elements, historical trajectory, comparative analysis) of the overall research problem.

Below were the transformed queries we formed from the original query:

- Banjar Culture influence on traditional architecture of South Kalimantan, specific cultural elements, architectural features, historical evolution, comparative analysis with other cultural influences
- Influence of Dayak, Malay, and other ethnic cultures on traditional architecture in South Kalimantan: a comparative study of architectural features and cultural elements.
- Exploration of Banjar cultural elements in the design and materials of traditional architecture in South Kalimantan, focusing on environmental adaptations and local wisdom.

- Investigating construction techniques and environmental adaptations in Banjar traditional houses: A study of unique features and sustainability practices.

Screening Papers

The defined search statements were systematically applied in conjunction with the established inclusion and exclusion criteria against the comprehensive academic database. This rigorous screening process resulted in the identification of a focused corpus comprising 90 scholarly articles, which formed the basis for the subsequent qualitative synthesis and analysis.

Citation Chaining - Identifying additional relevant works

This crucial step of the review process was further strengthened using citation chaining to ensure comprehensive coverage and contextualization. This involved Backward Citation Chaining, where the reference lists of core identified papers were systematically examined to retrieve foundational and historically antecedent studies, preventing the oversight of seminal work. Simultaneously, Forward Citation Chaining was employed to trace newer publications that cited the core papers, allowing for the identification of emerging debates, methodological advancements, and the trajectory of scholarly development in the field.

Relevance scoring and sorting

The assembled pool of 115 candidate papers (90 retrieved from systematic queries and 25 identified through citation chaining) underwent a final relevance ranking process. This procedure was designed to prioritize the most pertinent studies by assigning a graded relevance score to each paper. This filtering successfully established a definitive set of literature highly relevant to the research query, ultimately yielding 50 papers designated as highly relevant for in-depth qualitative analysis.

RESULTS AND DISCUSSION

Descriptive Summary of the Studies

This section maps the research landscape of the literature on Banjar Culture influence on traditional architecture of South Kalimantan, specific cultural elements, architectural features, historical evolution, comparative analysis with other cultural influences, revealing a broad interdisciplinary focus encompassing architectural typology, cultural symbolism, environmental adaptation, historical influences, and construction techniques.

The studies predominantly employ qualitative, descriptive, and case study methodologies, often integrating field observations, literature reviews, and simulation tools, with geographic focus centered on South Kalimantan and its riverine and swamp environments. This comparative synthesis addresses key research questions by elucidating the distinctive features of Banjar traditional architecture, its cultural meanings, adaptive strategies to local climate and geography, and interactions with neighboring ethnic architectural traditions.

Table 1. Descriptive Summary of the Studies

Study	Architectural Typology	Cultural Symbolism	Environmental Adaptation	Historical Influences	Construction Techniques
(Mentayani, 2008)	Bubungan Tinggi typology linked to Malay coastal origins	Influence of Dayak, Java, and Islam on motifs	Environmental conditions shape physical form	Malay, Dayak, Java, Islam cultural impacts	Traditional materials responsive to environment
(Aqli, 2011)	Bubungan Tinggi as royal house typology with stratification	Diverse beliefs expressed in wood carvings	Use of local woods for climate response	Reflects social hierarchy and cultural diversity	Wood-based structural system using local timber

(Dahliani et al., 2015)	Lanting house spatial changes due to river activity decline	Cultural expression tied to river lifestyle	Floating design adapts to river environment	River culture influence on architectural evolution	Construction adapted for floating and mobility
(Pahlevi et al., 2021)	Neo-vernacular government buildings reflecting Banjar forms	Visual elements like roof shapes and ornamentation	Incorporation of local climatic considerations	Modern reinterpretation of traditional motifs	Use of traditional forms in modern materials
(Mentayani & Andhini, 2016)	Typology based on geometric, cultural, religious, spatial themes	Ornamentation linked to cultural and religious identity	Adaptation to location and climate in design	Interrelation of cultural and spatial influences	Structural and ornamental integration
(Aulia & Veronica, 2024)	Comparative typology between Banjar and Sundanese houses	Shared and differing cultural motifs analyzed	Tropical climate responses in both architectures	Regional cultural influences contrasted	Material and foundation differences highlighted
(Liritantri & Safitri, 2022)	Interior spatial element Tawing Halat in Bubungan Tinggi	Tawing Halat as cultural identity and historical symbol	Interior spatial adaptation for social function	Reflects Banjar cultural values and history	Traditional interior partitioning techniques
(Suryatin et al., 2022)	Detailed lexicon of Bubungan Tinggi spatial and structural parts	Symbolic floral and calligraphic carvings	Stilt house form for flood adaptation	Embedded socio-cultural meanings in design	Distinctive construction lexicon and ornamentation
(Hestiyana, 2020)	Classification of ornament lexicons by building parts	Social values like cooperation and kinship in ornament	Ornament functions linked to social climate response	Ornamentation as cultural continuity	Carving techniques reflecting social functions
(Agusniansyah & Sarbini, 2024)	Modern transformations of Bubungan Tinggi typology	Traditional elements adapted in contemporary design	Integration of traditional form with modern needs	Preservation through architectural evolution	Experimental design methods for adaptation
(Agusniansyah, 2024)	Integration of traditional facade with modern smart home design	Facade elements retain cultural symbolism	Sustainable materials and smart systems combined	Cultural heritage in modern housing context	Use of eco-friendly materials and technology
(Ihsan et al., 2024)	Bubungan Tinggi as cultural heritage and tourist attraction	Preservation of cultural identity through architecture	Challenges of maintaining traditional forms	Importance of cultural promotion and education	Conservation efforts for aging structures

(Muchamad & Aufa, 2008)	Reconstruction of Banjar palace typology based on Bubungan Tinggi	Palace features symbolic spatial organization	Climate-adapted roof and room forms	Historical royal architecture influence	Traditional construction reflecting palace status
(Dharmatanna et al., 2024)	Passive cooling performance comparison of Banjar house types	Design proportions linked to cultural status	CFD simulation of wind and cooling effects	Vernacular design optimized for tropical climate	Material and form for passive cooling efficiency
(Hafizha & Jairina, 2023)	Bioclimatic methods in Gajah Baliku traditional house	Cultural and climatic integration in design	Nine bioclimatic criteria met for comfort	Vernacular evolution with climate responsiveness	Use of local materials and construction methods
(Sofiyani et al., 2023)	Lanting house typology and preservation in urban river context	River culture reflected in spatial orientation	Decline due to shift from river to land living	Urbanization impacts on traditional forms	Material scarcity affects construction continuity
(Mentayani & Aufa, 2022)	Lexical and vernacular synthesis of Lanting house	Ethnolinguistic culture shapes architectural lexicon	Floating adaptability to riverine environment	Proto Banjar and Dipa Daha cultural roots	Flexible construction for mobility and resilience
(Afdholy, 2017)	Lanting house characteristics and decline factors	Cultural knowledge loss threatens vernacular identity	River-based lifestyle adaptation challenged	Societal activity shifts reduce traditional use	Material and construction challenges in urban setting
(Huzairin & Oktaviana, 2021)	Foundation typology for swamp land in Banjarmasin	Foundations designed for swampy terrain conditions	Load distribution adapted to tidal groundwater	Traditional knowledge informs foundation design	Six foundation types with wood trunk systems
(Huzairin & Andini, 2022)	Wood structural system unique to Banjar houses	Structural elements embody cultural craftsmanship	Wood frame adapted to swamp and climate	Traditional system distinct from Western frames	Seventeen structural elements with five key parts
(Ikhsan & Rizali, 2022)	Solar geometry factor in Bubungan Tinggi roof design	Roof angles embody local wisdom and symbolism	Roof shape minimizes solar heat gain	Cultural philosophy integrated with climate	Roof design enhances thermal comfort
(Muhammad, 2012)	Climate response as vernacular value in Bubungan Tinggi	Shape, material, and construction reflect climate	Passive design principles for thermal comfort	Vernacular as shelter controlling thermal comfort	Local materials and forms for climate adaptation
(Ikhsan et al., 2024)	CFD simulation of airflow around Bubungan Tinggi	Wind patterns influence	Airspeed concentration	Local climate informs	Simulation supports traditional

		ventilation placement	under high roof studied	ventilation design	ventilation strategies
(Oktaviana et al., 2023)	Physical changes and degradation in Banjar traditional houses	Loss of original spatial and ornamental features	Environmental and human factors cause deterioration	Preservation challenges amid modernization	Physical elements often replaced or neglected
(Hasanah & Rahmasari, 2020)	Local wisdom in Sultan Suriansyah Mosque architecture	Natural symbols and Islamic values in ornament	Material choice and color reflect cultural identity	Mosque as cultural and religious symbol	Use of ironwood and traditional motifs
(Noraidarayanti et al., 2024)	Development of housing combining local wisdom and modernity	Palimasan house influence in modern housing	Adaptation to contemporary needs with heritage	Cultural heritage preserved in new designs	Modern materials with traditional forms
(Agusniansyah, 2024)	Weaknesses in wood pillar foundations causing failures	Structural defects linked to foundation damage	Limited load capacity in swampy conditions	Traditional methods challenged by modern demands	Need for improved foundation design
(Herwandi et al., 2021)	Science literacy module based on Lanting house foundation	Educational integration of local wisdom in materials	Foundation knowledge linked to daily life applications	Cultural heritage in science education	Validation of module for local context
(Paris & Wahyuda, 2022)	Ethnomathematics in Bubungan Tinggi design	Geometric and spatial concepts reflect culture	Mathematical principles embedded in architecture	Cultural philosophy expressed through design	Qualitative ethnographic approach
(Afdholy et al., 2024)	Vernacular architecture response to river environment	Adaptation to physical, cultural, and environmental factors	Harmony between tradition and modernity	River orientation shapes spatial organization	Technical, cultural, and environmental elements
(Marcillia, 2023)	Characteristics of in-between spaces in riverside settlements	Wood materials and open enclosures dominate	Linear spatial patterns respond to river context	Urbanization impacts traditional spatial forms	Use of wood and open spaces for social function
(Pertiwi et al., 2023)	Spatial typology of Sasirangan artisan houses	Dual function as living and production spaces	Riverfront designation threatens traditional forms	Spatial organization supports craft activities	Functional and spatial diversity identified
(Nugroho et al., 2020)	Cultural landscape of Gosong Sungai riverside settlement	Rich cultural diversity linked to river life	Settlement patterns shaped by water culture	Social and ecological interrelations emphasized	Mixed methods reveal cultural potentials

(Zohrah & Fukukawa, 2010)	Formal and structural characteristics of Rumah Bubungan Tinggi	Urban-rural differences in design and construction	Conservation as cultural heritage focus	Social grouping influences architectural variation	Structural analysis of floor plan and elevation
(Abriazizu et al., 2023)	Cultural ecology of Dayak lanting houses	Human-nature relationship in floating architecture	Adaptation to flooding and river environment	Vernacular architecture as flood mitigation	Community use reflects environmental interaction
(Agusniansyah, 2024)	Early signs of wooden pillar foundation failure	Structural damage indicators in swamp houses	Limited capacity leads to frequent collapses	Need for foundation maintenance and improvement	Field observations highlight weaknesses
(Mentayani, 2008)	Architectural relationship between Banjar and Bakumpai tribes	Similarities in spatial organization and ornamentation	Differences in dimensions and carving motifs	Bakumpai architecture predates Banjar development	Cross-cultural architectural influences
(Agustina, 2018)	Management of Banjar local wisdom in culture and language	Cultural uniqueness in customs and artifacts	Philosophy embedded in social and economic activities	Interaction with external environment shapes values	Rich diversity in cultural expressions
(Huzairin & Oktaviana, 2022)	Strength and durability of Kalang foundation in swamp land	Use of durable woods resistant to climate and decay	Foundation design prevents structural settlement	Traditional foundation system tested over centuries	Structural elements optimized for load and environment
(Novianto et al., 2023)	Passive design and natural ventilation in Banjar housing	Thermal comfort achieved through vernacular techniques	Upper comfort limits challenged by climate change	Need for innovation in passive design strategies	Field survey confirms efficacy of traditional methods
(Daryanto, 2016)	Typology of Lanting floating houses in different locations	Consistent function, materials, and roof forms	Floating design integral to river culture	No significant typological differences found	Comparative analysis across river and swamp sites
(Sadono & Endriawan, 2021)	Acculturation between Javanese and Kalimantan cultures	Temple and hermitage architecture reflect cultural fusion	Visual and verbal documentation of cultural sites	Integration of legends and symbolic forms	Archaeological and semiotic approaches
(Kusliansjah, 2022)	Urban architecture identity in tidal	Building typologies	Water-based culture	Pre-colonial to colonial	Four typologies: raft,

	river city Banjarmasin	shaped by tidal hydrodynamics	influences spatial patterns	architectural evolution	water stilt, land stilt, underground
(Ikhsan et al., 2021)	Thermal characteristics of Bubungan Tinggi via CFD simulation	Roof shape reduces solar heat absorption	Hot air accumulates under high roof apex	Mechanical ventilation suggested to improve comfort	Local wisdom reflected in thermal design
(Prihatmaji & Nugraha, 2019)	EPS floating technology for Lanting house foundation	Modern material compared with traditional floats	EPS offers environmental and structural advantages	Floating technology supports riverine architecture	Engineering innovation for traditional forms
(Abdurrahman & Abduh, 2020)	Banjar self-concept and river culture identity	Islamic values shape cultural identity and architecture	River culture central to Banjar lifestyle	Conversion of Dayak groups influences identity	Decline in river culture practices noted
(Mentayani et al., 2018)	Vernacularism of Mantuil water village in Banjarmasin	Riverfront architecture linked to cultural identity	Water-based local wisdom supports resilience	Settlement patterns reflect river dependence	Disaster mitigation potential emphasized
(Aufa, 2012)	Typology and form of traditional mosques in South Kalimantan	Three-room layout with symbolic roof layers	Dayak and Islamic symbolism in ornamentation	Mosque architecture distinct from other regions	Cultural and religious identity expressed

The systematic review of the literature reveals a robust scholarly consensus across five key architectural domains, collectively elucidating the deep cultural inscription and adaptive capacity of Banjar traditional housing. In terms of Architectural Typology, over 30 studies delineate house classifications, prominently featuring the Bubungan Tinggi and Lanting types, demonstrating a direct correlation between spatial organization and both social hierarchy and the distinct environmental context (Mentayani, 2008; Aqli, 2011; Dahliani et al., 2015).

Concurrently, more than 20 studies confirm the significance of Cultural Symbolism, identifying rich ornamentation, including floral, calligraphic, and natural motifs, which express Banjar cultural values and Islamic syncretism, deeply integrating identity into spatial elements like the Tawing Halat (Suryatin et al., 2022; Hestiyana, 2020; Liritantri & Safitri, 2022). Pertaining to

Environmental Adaptation, numerous investigations supported by computational fluid dynamics (CFD) and bioclimatic analyses detail the use of passive cooling strategies, natural ventilation, and material selection to master the tropical, humid, and swampy conditions (Dharmatanna et al., 2024; Hafizha & Jairina, 2023; Ikhsan et al., 2024), with the Lanting house standing as a unique exemplar of resilience to riverine dynamics (Mentayani & Aufa, 2022; Abriazizu et al., 2023).

Furthermore, Historical Influences are consistently traced through acculturation processes involving Malay, Dayak, Javanese, and Islamic contacts, which dynamically shaped both architectural forms and symbolic elements (Mentayani, 2008; Sadono & Endriawan, 2021). Finally, documentation of Construction Techniques highlights the durability of traditional foundation systems (Kalang and wood pillars) adapted for swampy terrain (Huzairin & Oktaviana, 2022), even as contemporary research addresses structural weaknesses and explores integrating modern technologies for future sustainability (Agusniansyah, 2024; Prihatmaji & Nugraha, 2019).

Critical Analysis and Synthesis

The body of research on Banjar culture's influence on traditional architecture in South Kalimantan presents a comprehensive exploration of typologies, cultural symbolism, environmental adaptation, and historical evolution. Strengths include detailed architectural analyses, ethnosemantic studies, and integration of bioclimatic principles, which collectively enrich understanding of Banjar vernacular architecture.

However, limitations arise from uneven methodological rigor, with some studies relying heavily on qualitative descriptive methods without robust quantitative validation. Additionally, while several works address cultural symbolism and environmental responsiveness, fewer provide in-depth comparative analyses with other ethnic influences or modern adaptation strategies. Preservation challenges and the impact of modernization on traditional forms are acknowledged but require more systematic investigation.

Table 2. Critical Analysis and Synthesis

Aspect	Strengths	Weaknesses
Historical Evolution and Typology	Research offers detailed typological classifications of Banjar traditional houses, particularly the preeminent Bubungan Tinggi house, which is consistently elucidated as originating from Malay architecture while demonstrating significant acculturation from Dayak, Javanese, and Islamic cultures (Mentayani, 2008; Mentayani & Andhini, 2016; Muchamad & Aufa, 2008). These findings, supported by both empirical and literature analyses, confirm that the Banjar built environment is inherently hybrid. Furthermore, the identification of multiple house types and their established link to social stratification enhances the understanding of architectural diversity and its deep societal roots within Banjar culture (Aqli, 2011; Mentayani & Andhini, 2016).	Despite achieving considerable typological clarity, studies concerning the historical evolution of Banjar architecture are consistently hampered by a lack of longitudinal data and comprehensive archaeological evidence, thereby restricting the depth of historical contextualization that can be established. This limitation is compounded by a tendency in literature to focus predominantly on the Bubungan Tinggi house type, which, while essential, potentially overshadows other crucial typologies such as the Lanting house. Consequently, the historical narrative remains partially obscured for non-dominant house forms, necessitating broader investigative efforts to fully document the architectural history of the region (Mentayani, 2008; Oktaviana et al., 2023).
Cultural Elements and Symbolism	Several studies rigorously document the lexicon of architectural elements and symbolic motifs in Banjar houses, providing rich ethnosemantic insights. This includes the analysis of floral and calligraphic carvings, the functional and social significance of interior elements like the Tawing Halat partition, and the values they embed (Liritantri & Safitri, 2022; Suryatin et al., 2022; Hestiyana, 2020; Paris & Wahyuda, 2022). Furthermore, the complex integration of Islamic and natural symbolism is shown to be a foundational element reflecting the unique, hybridized cultural identity of the	While scholarly interpretations of symbolism are generally well articulated, a key limitation is the tendency to generalize symbolic meanings without undertaking extensive cross validation from diverse community perspectives. This methodological approach risks creating an incomplete picture, particularly as the predominant focus remains on the symbolism found in elite or noble house types, which may underrepresent vernacular expressions and cultural nuances embedded within the dwellings of lower social strata (Liritantri & Safitri, 2022; Suryatin et al., 2022).

	Banjar people (Hasanah & Rahmasari, 2020).	
Environmental Adaptation and Passive Design	Studies demonstrate strong evidence of bioclimatic design principles in Banjar architecture, underscoring its sophisticated adaptation to the tropical humid climate and swampy environment. These principles include roof geometry designed to minimize solar heat gain, effective natural ventilation strategies, and foundation typologies specifically adapted to unstable terrain (Dharmatanna et al., 2024; Hafizha & Jairina, 2023; Ikhsan & Rizali, 2022; Muhammad, 2012; Ikhsan et al., 2024; Novianto et al., 2023). Crucially, the efficacy of this vernacular passive cooling has been quantitatively validated through computational simulations and thermal comfort measurements, bridging traditional knowledge with modern scientific assessment (Dharmatanna et al., 2024; Ikhsan et al., 2024; Ikhsan et al., 2021).	Despite these advances, some research relies on limited case studies or simulations that may not capture the full variability of climatic conditions or occupant behavior. The challenge of adapting traditional passive designs to future climate scenarios remains underexplored (Novianto et al., 2023).
Comparative Analysis with Other Cultural Influences	Comparative studies of Banjar architecture consistently highlight its deep Malay roots and the subsequent acculturation with Dayak and Javanese elements (Mentayani, 2008; Sadono & Endriawan, 2021). These analyses reveal both shared and distinct characteristics across various dimensions, including spatial organization, roof forms, and ornamentation, emphasizing the regional hybridity of the Banjar style (Mentayani, 2008). Furthermore, the specific architectural relationship identified between Banjar and Bakumpai traditional houses provides valuable insight into the localized historical and cultural exchanges that have shaped the built environment of South Kalimantan (Mentayani, 2008).	A major methodological limitation in the comparative analysis of Banjar architecture is that studies remain relatively sparse and frequently descriptive rather than rigorously analytical. There is a distinct absence of systematic frameworks or quantitative metrics necessary to accurately assess the precise degree of influence or hybridization across different ethnic traditions. Furthermore, most comparisons are confined to immediate geographical neighbors, such as Dayak or Javanese groups, with broader regional comparisons beyond this immediate scope remaining significantly limited (Mentayani, 2008; Mentayani, 2008).
Construction Techniques and Material Usage	Research identifies the sophisticated wooden structural systems and foundation typologies of Banjar architecture, such as the Kalang and wood pillar systems, emphasizing their inherent sustainability and resilience specifically adapted for swampy environments (Huzairin & Oktaviana, 2021; Huzairin & Andini, 2022; Agusniansyah, 2024; Huzairin & Oktaviana, 2022). The strategic use of durable local materials, most notably ulin wood, alongside adaptive construction	Despite the thorough documentation of structural systems, studies on construction techniques often lack detailed engineering analyses and fail to adequately address contemporary challenges. Specifically, there is an insufficient examination of the effects of material scarcity, the rate of structural degradation, and the mechanisms behind foundation failures in modern contexts (Agusniansyah, 2024). Furthermore, the complex and ongoing transition from traditional to modern

	methods, is well documented as a key factor in the long-term viability of these traditional structures (Huzairin & Andini, 2022; Huzairin & Oktaviana, 2022).	building materials and techniques is insufficiently examined, leaving a gap in understanding how to sustainably and structurally manage the architectural evolution of Banjar housing (Agusniansyah, 2024).
Preservation and Modern Adaptation	Recent works increasingly explore modern reinterpretations of Bubungan Tinggi architecture, focusing on a critical balance between heritage preservation and contemporary needs. These studies document efforts to integrate traditional elements with smart home technologies and eco friendly design, showcasing practical pathways for cultural continuity in the built environment (Agusniansyah & Sarbini, 2024; Agusniansyah, 2024; Ihsan et al., 2024). Furthermore, the literature recognizes the vital role of tourism and community engagement as essential non architectural strategies for ensuring the financial and social sustainability of preservation efforts (Ihsan et al., 2024).	Preservation studies frequently highlight the fragility and accelerated decline of Banjar traditional houses but critically lack comprehensive, integrated strategies for sustainable conservation. While the threats are well documented (Ihsan et al., 2024; Oktaviana et al., 2023), the impact of accelerating urbanization and profound socio-economic changes on this architectural heritage is often under addressed. Consequently, the research base suffers from a deficit of empirical evaluation regarding the actual outcomes and long-term effectiveness of existing preservation interventions, hindering the development of scalable and viable conservation models for the region.
Vernacular Riverine Architecture and Socio-Cultural Context	The unique river-based lifestyle of the Banjar people is comprehensively captured through studies focusing on the Lanting houses and their riverside settlements. These investigations consistently emphasize the powerful interplay between environment, culture, and architecture (Abdurrahman & Abduh, 2020). The research highlights how the Lanting house embodies Banjar cultural identity, showcasing sophisticated spatial flexibility and necessary design adaptations to volatile hydrological conditions (Dahliani et al., 2015; Sofiyani et al., 2023; Mentayani & Aufa, 2022; Afdholy, 2017; Abriazizu et al., 2023; Mentayani et al., 2018).	Nonetheless, while the cultural and architectural significance of river-based living is well established, the literature notes the decline of the river oriented lifestyle and its associated architectural forms without providing sufficient exploration of necessary mitigation or revitalization strategies (Dahliani et al., 2015). Furthermore, the socioeconomic factors that primarily drive these profound architectural and cultural shifts are not deeply analyzed, which critically limits the policy relevance of existing findings and hinders the development of effective interventions for sustainable heritage management (Afdholy, 2017).

Thematic Review of Literature

The literature on Banjar culture’s influence on traditional architecture in South Kalimantan reveals several major themes including the detailed typology and morphological characteristics of traditional Banjar houses, with strong emphasis on the Bubungan Tinggi and Lanting houses as cultural icons. Studies extensively explore cultural elements and symbolism, integrating Islamic and indigenous beliefs in architectural ornamentation and spatial organization. Another key theme is the environmental adaptation and passive design embedded in these vernacular architectures, particularly in response to the tropical climate and riverine landscape.

Comparative analyses highlight cultural exchanges and acculturation with neighboring ethnic groups like Dayak, Malay, and Javanese, revealing both shared and unique architectural traits. Further emergent themes include modern reinterpretations and preservation challenges, as well as construction techniques reflecting local wisdom and sustainability.

Table 3. Thematic Review of Literature

Theme	Appears In	Theme Description
Typology and Morphology of Banjar Traditional Architecture	22/50 Papers	The scholarly body of work concerning the typology and morphology of Banjar traditional houses principally concentrates on the classification, spatial organization, and structural elements of predominant types, such as the Bubungan Tinggi, Palimbangan, and Lanting. Research within this area systematically highlights their characteristic geometric forms, specific room functions, and distinctive features, including high roofs and annexes. Collectively, these investigations furnish a robust scientific basis for fully understanding the Banjar architectural identity and its subsequent evolution (Aqli, 2011; Mentayani & Andhini, 2016; Suryatin et al., 2022; Muchamad & Aufa, 2008; Mentayani & Aufa, 2022; Daryanto, 2016).
Cultural Elements and Symbolism in Architectural Features	20/50 Papers	The traditional Banjar architecture is profoundly imbued with cultural symbolism, a feature manifested conspicuously through the decorative motifs in carvings, the functional demarcation of interior space, and the synthesis of Islamic doctrines with enduring indigenous traditions. Scholarly literature consistently documents the symbolic significance of both floral and calligraphic ornamentation, which collectively serve as an architectural lexicon expressing communal social identity, philosophical worldviews, and core Banjar values such as gotong royong (cooperation). Furthermore, specific structural divisions, such as the Tawing Halat, function as significant markers of family identity and social use, underscoring how deeply cultural belief systems are integrated into the spatial and structural design of the traditional dwelling (Liritantri & Safitri, 2022; Hestiyana, 2020; Hasanah & Rahmasari, 2020; Paris & Wahyuda, 2022; Mentayani, 2008).
Environmental Adaptation and Passive Design Principles	18/50 Papers	Banjar traditional houses exemplify sophisticated passive design strategies meticulously adapted to the dual challenges of the tropical humid climate and the prevalent riverine environment. Research demonstrates that architectural features, including elevated stilt foundations, high steep roofs, and the deliberate incorporation of natural ventilation and solar geometry, are crucial for maintaining thermal comfort and maximizing energy efficiency. These adaptive roles have been rigorously explored and scientifically substantiated through the application of advanced diagnostic tools such as Computational Fluid Dynamics (CFD) simulations and comprehensive bioclimatic analyses (Dharmatanna et al., 2024; Hafizha & Jairina, 2023; Ikhsan & Rizali, 2022; Muhammad, 2012; Ikhsan et al., 2024; Novianto et al., 2023; Ikhsan et al., 2021).
Influence and Comparative Analysis with Other Cultures	15/50 Papers	Comparative studies consistently reveal significant evidence of cultural exchange and hybridity between Banjar architecture and the vernacular traditions of neighboring ethnic groups, specifically the Dayak, Malay, Bakumpai, Javanese, and Sundanese. These external influences are demonstrably manifested across various architectural dimensions, including roof styles, spatial layouts, and specific construction techniques. This interethnic transmission illustrates complex acculturation processes that have ultimately defined the unique, hybrid architectural identity of the Banjar people, positioning their built environment as a dynamic reflection of cross-cultural interaction (Mentayani, 2008; Aulia & Veronica, 2024; Zohrah & Fukukawa, 2010; Sadono & Endriawan, 2021).

Construction Techniques and Local Material Usage	12/50 Papers	Research concerning the structural systems of Banjar architecture emphasizes the strategic use of sustainable local materials, particularly ulin (ironwood), and traditional wood framing methods specifically adapted to the swampy soil conditions. Studies investigate distinct foundation typologies, notably the Kalang and wooden pillar systems, highlighting their inherent durability and superior load distribution capabilities (Huzairin & Oktaviana, 2021; Huzairin & Oktaviana, 2022). This focus on traditional construction also addresses associated challenges, including documented instances of structural failures and the necessity for improved maintenance practices to ensure the long-term preservation of this unique vernacular heritage (Huzairin & Andini, 2022; Agusniansyah, 2024).
Lanting Houses as Riverine Cultural Expression and Vernacularism	11/50 Papers	The Lanting houses represent a crucial subcategory within Banjar vernacular architecture, specifically examined as floating structures integral to the region's historical river culture. These dwellings exhibit unique spatial flexibility and demonstrate essential adaptations that provide resilience against fluvial dynamics and seasonal flooding (Mentayani & Aufa, 2022; Abriazizu et al., 2023). However, contemporary research documents a significant sociocultural shift driven by changing socioeconomic conditions, resulting in a widespread transformation from the traditional river-oriented lifestyle to a more land-oriented settlement pattern (Dahliani et al., 2015; Sofiyani et al., 2023). This pronounced shift raises considerable concerns within the scholarly community regarding the long-term preservation of this unique floating typology and the maintenance of Banjar cultural continuity (Afdholi, 2017; Daryanto, 2016; Prihatmaji & Nugraha, 2019).
Preservation, Modern Adaptation, and Cultural Heritage	9/50 Papers	A critical thread in current research addresses the ongoing challenge of preserving Banjar traditional architecture in the face of rapid modernization and urbanization. Scholarly efforts are directed towards solutions that integrate heritage protection with contemporary development, including programs focused on revitalizing cultural knowledge through education and promoting architectural tourism (Agusniansyah & Sarbini, 2024; Noraidarayanti et al., 2024). A key area of innovation involves the modern reinterpretation of classic designs, such as the Bubungan Tinggi typology. These efforts seek a sustainable architectural fusion by integrating traditional elements with smart home and eco friendly technologies, demonstrating a commitment to honoring cultural heritage while addressing modern living standards (Agusniansyah, 2024; Ihsan et al., 2024; Oktaviana et al., 2023).
Urban and Settlement Context of Banjar Architecture	7/50 Papers	Studies focusing on the urban morphology of Banjar settlements detail the pervasive influence of the tidal river city environment on both spatial patterns and community identity. Research elucidates the specific organization of water villages, examining how residential spaces are structurally and functionally integrated with local economic activities, such as the production spaces of sasirangan artisans (Pertiwi et al., 2023; Nugroho et al., 2020). This interrelationship highlights the unique adaptation of urban planning within the Banjar context, where the river not only dictates building orientation but also serves as the primary element in shaping the collective identity of these traditional settlements (Marcillia, 2023; Kusliansjah, 2022; Mentayani et al., 2018).
Religious and Spiritual	5/50 Papers	Banjar religious architecture, exemplified by traditional mosques such as the Sultan Suriansyah Mosque, serves as a powerful architectural statement

Architectural Expressions		of the region's cultural identity. These structures distinctly encapsulate the fusion of both natural symbolism and core Islamic identity, a synthesis reflected through specific spatial arrangements, multi tiered roof forms, and carefully executed ornamental motifs. By embodying both community values and historical narrative, Banjar religious buildings act as critical cultural artifacts that showcase the deeply integrated spiritual and communal practices of the Banjar people (Hasanah & Rahmasari, 2020; Aufa, 2012).
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Chronological Review of Literature

Research on Banjar culture's influence on traditional architecture in South Kalimantan initially focused on identifying the origins and typologies of key traditional house types, especially the Bubungan Tinggi. Early studies emphasized historical evolution, cultural syncretism, and the foundational role of environmental conditions. Over time, research expanded to detailed analyses of architectural elements, symbolism, and cultural meanings embedded in construction and ornamentation. More recent work incorporates bioclimatic design, sustainability, and integration with modern architectural practices, alongside preservation and adaptive reuse challenges amid socio-economic transformations.

Table 4. Chronological Review of Literature

Year Range	Research Direction	Description
2008–2011	Origins and Typology of Banjar Traditional Architecture	Studies primarily explored the genesis and classification of Banjar traditional houses, particularly Bubungan Tinggi, tracing influences from Malay, Dayak, Javanese, and Islamic cultures. Emphasis was on physical environmental factors shaping architecture and the role of traditional houses as social status symbols. Early reconstructions of royal palace typologies and structural analyses were also conducted.
2012–2017	Cultural Symbolism and Vernacular Adaptation	Research deepened into the symbolic lexicon of architectural elements and ornaments, exploring the social and spiritual meanings within Banjar houses. Investigations into vernacular responses to climate and environment emerged, focusing on passive cooling and thermal comfort. Studies of floating houses (Lanting) documented their cultural significance and typological features amid changing river-based lifestyles.
2018–2020	Preservation, Cultural Identity, and Structural Systems	Attention turned to the preservation of Banjar cultural heritage through documentation of architectural forms and community practices. Vernacularism of water villages and the influence of Islam on ornamentation and spatial layout were examined. Structural studies highlighted traditional wood construction systems and foundation typologies adapted to swampy terrain, emphasizing durability and sustainability.
2021–2023	Bioclimatic Design and Environmental Responsiveness	Focus shifted to the application of bioclimatic architectural methods in Banjar houses, assessing environmental adaptations such as natural ventilation and passive design. Computational simulations analyzed thermal and airflow characteristics in Bubungan Tinggi houses, informing sustainable design strategies. Urban morphology studies addressed riverine settlement patterns and spatial dynamics of riverfront communities.

2024	Modern Integration and Sustainable Preservation	Recent research explores the transformation of traditional Banjar architectural elements into modern architectural designs, integrating smart home technologies and eco-friendly materials. Experimental approaches model modern interpretations of Bubungan Tinggi morphology to preserve cultural identity while meeting contemporary needs. Efforts toward enhancing cultural tourism, foundation engineering improvements, and adaptive reuse highlight sustainability and resilience challenges.
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Agreement and Divergence Across Studies

The reviewed literature broadly agrees on the distinctive architectural typologies of Banjar traditional houses, particularly the prominence of the Bubungan Tinggi and Lanting types, reflecting cultural symbolism and environmental adaptation. Most studies emphasize the integration of cultural values, Islamic influences, and local environmental responses such as passive cooling and foundation solutions adapted to swampy terrains. Divergences arise mainly in the interpretation of external cultural influences, the degree of preservation and transformation in modern contexts, and the specific performance of passive design strategies. These differences are often attributable to varying research methodologies, geographic focus within South Kalimantan, and temporal contexts addressing either historical evolution or contemporary adaptations.

Table 5. Agreement and Divergence Across Studies

Comparison Criterion	Studies in Agreement	Studies in Divergence	Potential Explanations
Architectural Typology and Spatial Organization	There is an established consensus in the literature that the Bubungan Tinggi represents the foremost and most characteristic Banjar traditional house typology, defined by its stilt construction, distinctive high steep roof, and a complex spatial configuration comprising specific room functions such as the pelataran, panampik, palidangan, anjung, and padapuran (Aqli, 2011; Suryatin et al., 2022; Muchamad & Aufa, 2008; Zohrah & Fukukawa, 2010). Conversely, the Lanting house type is examined as a vernacular floating river dwelling, a critical structure that reflects the historical riverine lifestyle and demonstrates a necessary adaptive spatial organization for dynamic aquatic environments.	Despite the consensus on core typologies, the literature presents a degree of divergence regarding the functional evolution of riverine architecture. Specifically, studies note variations in the degree of change observed in the spatial orientation and usage of Lanting houses, correlating these shifts with the decline of traditional river transport practices and subsequent decline in river-oriented spatial features (Dahliani et al., 2015; Sofiyani et al., 2023; Afdholy, 2017). Furthermore, a less critical, but persistent, point of variance exists across the corpus concerning the precise number and standardized classification of the various Banjar traditional house types, suggesting a minor need for nomenclatural	These observed variations are primarily attributable to methodological heterogeneity across the reviewed literature. Specifically, the diachronic focus of individual investigations, whether centered on historical archives or contemporary practices—and geographic disparities in the locations sampled within South Kalimantan inevitably influence the derived observations concerning architectural evolution and adaptation. Furthermore, differences in the employed sample sizes and the specific typology frameworks utilized for architectural classification contribute directly to the minor inconsistencies reported regarding the comprehensive inventory and characterization of Banjar house types.

	(Dahlioni et al., 2015; Mentayani & Aufa, 2022; Daryanto, 2016). Fundamentally, the classification of these typologies is intrinsically linked not only to the historical evolution of the Banjar culture but also serves as a direct architectural marker of social status within the community (Aqli, 2011; Mentayani & Andhini, 2016; Liritantri & Safitri, 2022).	harmonization in future research (Mentayani, 2008; Mentayani & Andhini, 2016).	
Cultural Symbolism and Ornamentation	Studies consistently affirm the presence of rich symbolic motifs deeply embedded in Banjar architecture, prominently featuring floral and calligraphic carvings that articulate core social values and the community's Islamic identity (Suryatin et al., 2022; Hestiyana, 2020; Hasanah & Rahmasari, 2020; Paris & Wahyuda, 2022). Furthermore, the Tawing Halat wall is recognized as a culturally significant interior element, functioning as a spatial marker of social and family identity (Liritantri & Safitri, 2022; Hestiyana, 2020). This integration of meaning underscores the vital role of architectural symbolism in plays in the expression of Banjar cultural identity and the long-term preservation of its intangible heritage (Agustina, 2018).	A degree of divergence is evident in the specific focus and methodological depth of the ethnosemantic analysis applied to ornamentation. Some studies prioritize the detailed lexicon and classification of symbolic elements in relation to broader social values (Suryatin et al., 2022; Hestiyana, 2020), while others place a stronger emphasis on the abstract symbolic meanings associated with specific natural and Islamic motifs (Hasanah & Rahmasari, 2020; Paris & Wahyuda, 2022). This variation in research focus extends to contemporary architectural practice, where the extent of symbolic integration into modern reinterpretations of Banjar houses is not uniform across all design initiatives (Agusniansyah & Sarbini, 2024; Agusniansyah, 2024).	These observed analytical variations are primarily a result of differing disciplinary orientations and specific research objectives. Divergence is frequently linked to studies rooted in fields such as ethnomathematics, semantic cultural studies, or traditional architectural design, each employing unique theoretical lenses and terminologies. Furthermore, the differences are magnified by the contrasting aims of the research focusing narrowly on heritage preservation, while others prioritize the exploration of modernization and innovative architectural fusion.
Environmental Adaptation Strategies	There is strong scholarly agreement that Banjar traditional houses, particularly the Bubungan Tinggi and Lanting typologies, are exceptionally well adapted to the challenging tropical humid climate and swampy	Despite the overall success of Banjar environmental adaptation, some limitations and concerns exist in the scholarly findings. Certain studies project limitations in the efficacy of existing passive cooling strategies under future climate change	These variations in environmental adaptation findings are primarily rooted in methodological differences. Specifically, divergences arise from the use of distinct analytical approaches, contrasting simulation-based methods (such as CFD) with

	environment. This successful adaptation is realized through crucial design features such as elevated stilt construction, the use of natural ventilation channels, and specialized passive cooling techniques (Mentayani, 2008; Dharmatanna et al., 2024; Hafizha & Jairina, 2023; Ikhsan & Rizali, 2022; Muhammad, 2012; Ikhsan et al., 2024; Novianto et al., 2023; Ikhsan et al., 2021). Furthermore, the foundation systems, including the Kalang and traditional wooden pillar configurations, are consistently recognized as effective and durable engineering solutions for load distribution on unstable, swampy land (Huzairin & Oktaviana, 2021; Huzairin & Andini, 2022; Agusniansyah, 2024; Huzairin & Oktaviana, 2022).	scenarios, suggesting that research and development focus on improved or hybrid architectural solutions may be necessary (Novianto et al., 2023). Furthermore, a critical divergence appears in the performance analysis of the traditional foundations: while Kalang foundations are consistently highlighted for their durability, concerns have been raised regarding the structural performance and potential for failure in traditional wooden pillar foundations, underscoring the need for enhanced maintenance and structural remediation (Agusniansyah, 2024; Huzairin & Oktaviana, 2022). Lastly, while Computational Fluid Dynamics (CFD) simulations are employed to validate passive design, the derived insights into specific airflow patterns and thermal performance often exhibit varying, nuanced results across different models (Ikhsan et al., 2024; Ikhsan et al., 2021).	traditional empirical observation. Additionally, the temporal focus of the research—whether examining historic performance under past climate conditions or projecting performance against future climate change challenges—introduces variation. Finally, observed differences often correlate with the specific foundation types under investigation, such as wooden pillars versus Kalang systems, highlighting that adaptation success is not uniform across all traditional Banjar construction.
Historical and Cross-Cultural Influences	Most scholarly work concurs that Banjar architecture finds its genesis in Malay origins, but its subsequent development was profoundly shaped by significant acculturation processes involving Dayak, Javanese, and Islamic influences (Mentayani, 2008; Muchamad & Aufa, 2008; Sadono & Endriawan, 2021). These cross-cultural interactions were foundational to defining Banjar cultural identity, manifesting distinctly in both the spatial organization and the symbolic content of the	However, the literature is marked by some divergence concerning the chronology and primacy of specific cultural influences. For instance, some research suggests that the Bakumpai traditional architecture may chronologically predate and influence certain aspects of Banjar architectural development (Mentayani, 2008). Interpretation also varies regarding the precise degree of integration and distinctiveness of Javanese architectural elements when weighed against the deep rooted indigenous and Malay origins (Mentayani, 2008; Sadono & Endriawan,	These observed differences are largely the result of variations in methodological approaches and interpretive frameworks. Specifically, divergences stem from the varied historical data sources utilized, the specific regional focus within South Kalimantan adopted by researchers, and the theoretical frameworks applied to analyze acculturation. Crucially, comparative studies often employ different cultural benchmarks, leading to nuanced, sometimes contrasting, conclusions regarding the precise extent of external influence versus the

	built environment (Hasanah & Rahmasari, 2020; Mentayani, 2008). Furthermore, the Banjar palace architecture is specifically identified in research as being typologically linked to the Bubungan Tinggi form, underscoring the deep royal and historical significance of this predominant house type (Muchamad & Aufa, 2008).	2021). These varying interpretations are further compounded by comparative analyses with other regional vernacular architectures, such as the Sundanese, which reveal a mix of both shared pan-Nusantara characteristics and unique Banjar differentiators (Aulia & Veronica, 2024).	architectural originality of the Banjar tradition.
Construction Techniques and Material Usage	There is unanimous agreement in the research regarding the selection of durable local woods, such as ulin (ironwood), for structural elements, underscoring the importance of sophisticated timber framing and foundation systems meticulously adapted to the swampy terrain (Huzairin & Oktaviana, 2021; Mentayani, 2008; Huzairin & Andini, 2022). Specifically, foundations like the Kalang system are recognized as highly effective long-term solutions, reflecting both local wisdom and sustainable practices. However, studies also highlight a necessary distinction in performance, noting structural limitations and potential failure concerns associated with the traditional wooden pillar foundations, a contrast with the success observed in the Kalang typology (Agusniansyah, 2024; Huzairin & Oktaviana, 2022).	A key divergence in the literature on construction techniques pertains to the assessment of foundation reliability. Recent studies present findings that indicate specific weaknesses and failure risks in wooden pillar foundations, a view that contrasts significantly with earlier assertions of their inherent long-term durability (Agusniansyah, 2024; Huzairin & Oktaviana, 2022). This critical observation highlights the dynamic challenges associated with maintaining historic construction methods. Concurrently, other research focuses on modern integration efforts, proposing the fusion of traditional forms with new materials and smart home technologies. These initiatives aim to blend the wisdom of Banjar heritage with contemporary performance needs, as seen in new housing developments that integrate local construction wisdom with modern adaptations, reflecting an evolving and hybridized architectural approach (Agusniansyah & Sarbini, 2024; Noraidarayanti et al., 2024).	These observed differences in the assessment of structural integrity are fundamentally rooted in the influence of evolving external factors and a shifting research paradigm. Divergences stem from changes in the availability of materials, the introduction of technological advancements in structural analysis, and an increased awareness of vulnerabilities over the long term. Consequently, modern studies often prioritize the integration of traditional wisdom with architectural innovation, leading to a research focus that intentionally diverges from the analysis of purely vernacular performance data.

THEORETICAL AND PRACTICAL IMPLICATIONS

Theoretical Implications

The synthesis of research on Banjar traditional architecture, prominently featuring the Bubungan Tinggi house, strongly reinforces the theoretical premise that architectural forms are deeply intertwined with cultural identity, social hierarchy, and environmental adaptation. Studies in typology and morphology confirm that Banjar architecture embodies a complex syncretism, integrating indigenous elements, Islamic influences, and external contributions from Malay, Dayak, and Javanese cultures, thereby supporting theories of vernacular architecture as a dynamic cultural expression shaped by historical and social fluidity (Mentayani, 2008; Mentayani & Andhini, 2016).

This discourse is extended by detailed ethnosemantic analyses of architectural lexicons and ornamentation, which provide a nuanced theoretical framework for interpreting symbolism and positioning vernacular architecture as a sophisticated semiotic system reflecting social values and beliefs (Suryatin et al., 2022; Hestiyana, 2020; Paris & Wahyuda, 2022).

Furthermore, the consistent documentation of bioclimatic and passive design principles such as high roof geometry, natural ventilation, and strategic material selection in Bubungan Tinggi and Lanting types theoretically substantiates the concept of vernacular building as an early, highly effective form of sustainable design, aligning with contemporary environmental design theories (Dharmatanna et al., 2024; Hafizha & Jairina, 2023; Muhammad, 2012).

This traditional knowledge is quantitatively validated by the application of Computational Fluid Dynamics (CFD) simulations, which introduces a crucial scientific dimension to vernacular studies, bridging traditional wisdom with modern optimization potential (Ikhsan et al., 2024; Ikhsan et al., 2021; Novianto et al., 2023).

Practical Implications

The aggregated findings hold significant practical implications for heritage management, architectural education, and sustainable development across South Kalimantan. The detailed documentation of typologies, structural systems, and material durability, especially concerning foundation types like the Kalang system, provides an essential knowledge base for conservation and restoration efforts, offering practical guidelines to prevent structural failures during rehabilitation (Huzairin & Oktaviana, 2022; Agusniansyah, 2024).

Furthermore, insights into the symbolic and functional roles of interior elements, such as the Tawing Halat partition, inform the development of culturally sensitive interior design practices and architectural curricula aimed at preserving intangible heritage (Liritantri & Safitri, 2022; Suryatin et al., 2022). Environmentally, the validation of passive cooling and thermal comfort principles suggests immediate applications for developing energy efficient building codes and design guidelines for contemporary tropical housing (Dharmatanna et al., 2024; Novianto et al., 2023).

Crucially, the observed transformations of Lanting houses necessitate adaptive preservation strategies that leverage river based tourism and community engagement to safeguard cultural continuity (Dahlani et al., 2015), while the successful modern reinterpretations of Bubungan Tinggi forms into smart and eco friendly designs demonstrate viable pathways for cultural heritage to inform innovative and sustainable contemporary architecture (Agusniansyah & Sarbini, 2024; Ihsan et al., 2024).

Limitations of the Literature

Table 6. Limitations of the Literature

Area of Limitation	Description of Limitation	Papers which have limitation
Geographic Concentration	Most studies focus on specific locations within South Kalimantan, such as Banjarmasin or villages, limiting the generalizability of findings to the entire Banjar cultural region. This geographic bias restricts external validity and may	(Mentayani, 2008), (Dahlani et al., 2015), (Ihsan et al., 2024), (Sofiyani et al., 2023), (Mentayani & Aufa, 2022), (Mentayani et al., 2018).

	overlook regional architectural variations.	
Limited Longitudinal Data	Few studies provide longitudinal analysis of architectural evolution or preservation status over extended periods, which constrains understanding of temporal changes and the impact of modernization on traditional forms. This limits insights into historical evolution and sustainability.	(Dahlani et al., 2015), (Oktaviana et al., 2023), (Sofiyani et al., 2023).
Methodological Constraints	Predominantly qualitative and descriptive methods are used, with limited quantitative or experimental approaches, reducing the robustness and replicability of findings. This methodological constraint affects the strength of causal inferences and generalizability.	(Mentayani, 2008), (Aqli, 2011), (Liritantri & Safitri, 2022), (Suryatin et al., 2022), (Dharmatanna et al., 2024), (Hafizha & Jairina, 2023), (Hafizha & Jairina, 2023), (Muhammad, 2012), (Ikhsan et al., 2024), (Paris & Wahyuda, 2022), (Novianto et al., 2023).
Narrow Focus on Bubungan Tinggi	A significant portion of research centers on the Bubungan Tinggi house type, potentially neglecting other Banjar architectural forms and limiting comprehensive understanding of the full architectural diversity within Banjar culture. This focus may bias cultural interpretations.	(Mentayani, 2008), (Aqli, 2011), (Liritantri & Safitri, 2022), (Suryatin et al., 2022), (Agusniansyah & Sarbini, 2024), (Agusniansyah, 2024), (Ihsan et al., 2024), (Muchamad & Aufa, 2008), (Ikhsan & Rizali, 2022), (Muhammad, 2012), (Ikhsan et al., 2024), (Paris & Wahyuda, 2022), (Ikhsan et al., 2021).
Insufficient Comparative Analysis	Comparative studies with other ethnic architectures or vernacular forms are limited, reducing the ability to contextualize Banjar architecture within broader regional or cultural frameworks. This gap weakens the understanding of intercultural influences and uniqueness.	(Mentayani, 2008), (Aulia & Veronica, 2024), (Mentayani, 2008).
Underrepresentation of Modern Adaptations	While some studies address modern reinterpretations, there is limited empirical evaluation of how traditional elements integrate with contemporary needs, affecting the applicability of findings to current architectural practice and preservation strategies.	(Agusniansyah & Sarbini, 2024), (Agusniansyah & Sarbini, 2024), (Agusniansyah, 2024), (Noraidarayanti et al., 2024).
Incomplete Environmental Adaptation Studies	Although environmental responsiveness is acknowledged, detailed empirical studies on passive design effectiveness and climate adaptation remain sparse, limiting the understanding of sustainability and comfort in traditional Banjar architecture under changing climatic conditions.	(Dharmatanna et al., 2024), (Hafizha & Jairina, 2023), (Hafizha & Jairina, 2023), (Ikhsan & Rizali, 2022), (Muhammad, 2012), (Ikhsan et al., 2024), (Novianto et al., 2023), (Ikhsan et al., 2021).

Limited Documentation on Construction Techniques	Few studies deeply analyze construction methods and material usage, especially regarding durability and foundation systems, which are critical for preservation and sustainable building practices. This gap affects practical applications in conservation and engineering.	(Huzairin & Oktaviana, 2021), (Huzairin & Andini, 2022), (Agusniansyah, 2024), (Agusniansyah, 2024), (Huzairin & Oktaviana, 2022).
Small Sample Sizes	Some research is based on limited samples or case studies, which may not represent the full variability of Banjar traditional architecture, thus constraining the external validity and generalizability of conclusions.	(Aqli, 2011), (Zohrah & Fukukawa, 2010), (Mentayani, 2008).
Lack of Interdisciplinary Approaches	Literature often lacks integration of interdisciplinary perspectives such as ethnomusicology, linguistics, or socio-economic analysis, which could enrich understanding of cultural symbolism and social functions embedded in architectural forms.	(Liritantri & Safitri, 2022), (Hestiyana, 2020), (Hasanah & Rahmasari, 2020), (Agustina, 2018).

Gaps and Future Research Directions

Table 7. Gaps and Future Research Directions

Gap Area	Description	Future Research Directions	Justification	Research Priority
Limited longitudinal archaeological data on Banjar architectural evolution	A significant limitation in the existing scholarship on the historical evolution of Banjar architecture is the insufficiency of comprehensive archaeological evidence and detailed longitudinal data. This methodological constraint restricts the ability to establish deep historical contextualization for house types beyond the most studied Bubungan Tinggi typology. Consequently, our understanding of the chronological development and precursor forms of	Conduct archaeological excavations and longitudinal studies to trace the evolution of various Banjar house typologies, including less-studied types like Lanting houses, to build a robust historical timeline.	The pursuit of a deeper historical contextualization is essential for fully understanding the observed architectural transformations and cultural influences over time. Without comprehensive archaeological evidence and extensive longitudinal data currently lacking for typologies beyond Bubungan Tinggi the ability to accurately trace the diachronic evolution of Banjar architecture is limited (Mentayani, 2008). Therefore, advancing historical	High

	Banjar vernacular architecture remains partially obscured, highlighting a clear need for future research incorporating greater historical rigor (Mentayani, 2008; Oktaviana et al., 2023).		understanding is not merely an academic exercise; it is a critical prerequisite for informing effective preservation strategies and substantiating the enduring claims of cultural identity within the built environment (Oktaviana et al., 2023).	
Underrepresentation of vernacular symbolism in lower social strata	Research into cultural symbolism exhibits a methodological concentration predominantly on elite Banjar house types, such as the Bubungan Tinggi. This concentration results in a potential oversight of the vernacular expressions and symbolic meanings embedded within the dwellings of lower social strata Banjar houses. Consequently, the current body of literature may offer an incomplete representation of the comprehensive social and philosophical worldview of the Banjar community as expressed through their built environment, highlighting a need to expand ethnosemantic analysis across diverse socioeconomic typologies (Liritantri & Safitri, 2022; Suryatin et al., 2022).	Ethnographic and semiotic studies targeting vernacular Banjar houses across social classes to document diverse symbolic motifs and their social meanings.	Expanding the documentation of cultural symbolism to include non elite Banjar dwellings is critical for achieving an inclusive understanding of the full spectrum of Banjar identity. By moving beyond the analysis of only privileged architectures, researchers can mitigate the risk of creating a historical narrative that is culturally homogenized and biased towards elite expressions. This broader, more equitable approach to ethnosemantic analysis is essential for fully capturing the diversity of cultural practices and ensuring comprehensive heritage preservation (Liritantri & Safitri, 2022; Suryatin et al., 2022).	Medium
Insufficient quantitative validation of environmental adaptation across diverse climatic scenarios	While research confirms the effectiveness of passive cooling and bioclimatic principles in Banjar houses, critical limitation remains in the methodological design. Most current studies rely primarily on a restricted	Expand quantitative studies using long-term monitoring and occupant behavior analysis; simulate future climate scenarios to test resilience of	To ensure the long-term viability and relevance of Banjar vernacular knowledge, it is imperative to enhance the quantitative rigor applied to environmental	High

	number of case studies or static computer simulations, which are inherently insufficient for fully capturing the dynamic variables of occupant behavior such as window operation and internal heat gain or for accurately predicting performance under future climate variability. Consequently, the theoretical validation of these sustainable principles requires expansion into longitudinal, empirical studies that integrate user interaction and robust climate projections for comprehensive analysis (Dharmatanna et al., 2024; Novianto et al., 2023).	traditional passive designs.	performance analysis. Moving beyond limited case studies and static simulations is critical for accurately modeling the influence of occupant behavior and projected future climate variability. By achieving this enhanced scientific scrutiny, researchers can effectively future proof vernacular designs, thereby supporting sustainable architectural adaptation and informing climate resilient building strategies for the region (Dharmatanna et al., 2024; Novianto et al., 2023).	
Sparse systematic comparative frameworks for cross-cultural architectural influences	A notable deficiency exists in the methodologies applied to comparative analyses of Banjar architecture against other regional ethnic forms (Dayak, Javanese, Sundanese, and Bakumpai). Current studies are predominantly descriptive in nature and generally lack the necessary systematic and quantitative frameworks required to accurately assess the extent of hybridization, the chronological flow of influence, and the precise degree of distinctiveness versus shared characteristics. This absence of rigorous comparative metrics limits the ability to move beyond anecdotal observations,	Develop standardized comparative frameworks incorporating spatial metrics, material analysis, and cultural semiotics to quantify and model cross-cultural architectural influences.	Implementing rigorous systematic comparative analyses is crucial for enabling a clearer and more precise understanding of the complex cultural exchanges and the degree of architectural syncretism within the Banjar tradition. By moving beyond mere descriptive comparison to quantifiable frameworks, researchers can not only more accurately document the distinctiveness and borrowed features of Banjar forms (Mentayani, 2008) but also generate knowledge that directly informs modern preservation strategies and serves as a vital foundation for	Medium

	highlighting a critical methodological gap in fully understanding the complex cultural interactions that shaped the Banjar architectural tradition (Mentayani, 2008; Aulia & Veronica, 2024).		contemporary architectural design innovation (Mentayani, 2008).	
Limited engineering analysis of traditional construction techniques under modern challenges	A significant gap persists in the technical documentation of Banjar construction techniques, as studies documenting traditional wood framing and foundation systems often lack detailed engineering assessments. Specifically, there is an absence of rigorous analysis addressing contemporary issues such as the impact of material scarcity on structural performance, the rate of structural degradation, and the specific mechanisms behind foundation failures in modern contexts (Agusniansyah, 2024). This deficiency in quantitative, applied engineering data limits the ability of practitioners to accurately model the long-term viability of traditional building materials and informs the necessary strategies for effective structural maintenance and contemporary rehabilitation.	Integrate structural engineering analyses with material science to evaluate durability and propose improved foundation designs compatible with traditional methods.	Addressing documented structural weaknesses and potential failure mechanisms is critical for the long-term sustainability of Banjar traditional houses. Recent findings that highlight the vulnerability of wooden pillar foundations underscore the urgent need for applied engineering solutions (Agusniansyah, 2024). Ensuring the longevity of these traditional structures particularly as they face changing environmental pressures and shifting socioeconomic conditions requires proactive intervention to prevent building collapse and maintain the physical integrity of this significant cultural heritage (Agusniansyah, 2024).	High
Inadequate strategies for sustainable preservation amid urbanization and modernization	While preservation efforts acknowledge the fragility and decline of traditional Banjar houses, a critical gap exists in the implementation of comprehensive, community engaged, and	Design and implement integrated preservation programs combining cultural education, tourism promotion, and community participation with	Achieving sustainable preservation of Banjar architectural heritage requires the adoption of holistic, integrated strategies. These approaches must deliberately balance the strict requirements	High

	economically viable conservation strategies, particularly within rapidly urbanizing areas. Existing research highlights the threats to heritage (Ihsan et al., 2024; Oktaviana et al., 2023), but it often fails to provide robust, scalable frameworks that reconcile the need for structural maintenance with the economic imperatives and lifestyle changes of modern communities. The absence of these integrated, participatory strategies risks the long-term viability of cultural heritage and calls for research focused on developing sustainable, local economic models to support architectural preservation.	policy support and funding mechanisms.	of heritage conservation with the powerful demands of socioeconomic development and accelerating urban growth pressures. Research suggests that conservation efforts must transcend mere physical maintenance and incorporate frameworks that are financially viable and responsive to modern community needs, thereby ensuring the continuity of cultural identity within a rapidly changing urban environment (Ihsan et al., 2024; Oktaviana et al., 2023).	
Decline of riverine lifestyle and floating architecture with insufficient revitalization approaches	The profound cultural and architectural significance of Lanting houses is currently threatened by the pervasive shift from river to land-based living. This socio-economic transition undermines the fundamental environmental context of these floating structures (Dahlani et al., 2015). Critically, the existing literature provides limited research on effective mitigation or revitalization strategies aimed at preserving this unique riverine typology and sustaining the associated cultural practices. This gap highlights an urgent need for research to develop and test adaptive frameworks that can	Investigate socio-economic drivers of decline; develop adaptive reuse, heritage tourism, and community-based revitalization models to sustain riverine architecture and culture.	The imperative to revitalize river-based architecture, such as the Lanting house typology, is critical for achieving a dual objective. First, actively supporting these structures ensures the preservation of a unique cultural identity intrinsically tied to the Banjar riverine lifestyle (Dahlani et al., 2015). Second, by sustaining and adapting these traditional methods of building on water, communities enhance their environmental resilience in flood prone regions, demonstrating a valuable model for sustainable, adaptive urbanism that can	High

	safeguard the Lanting house against functional obsolescence and cultural displacement (Afdholy, 2017).		inform broader regional policy (Afdholy, 2017).	
Lack of integration of traditional architectural knowledge into modern smart and sustainable housing	Although there are documented instances of modern reinterpretations of Banjar architecture, the research investigating the integration of traditional design with smart home technologies and eco friendly materials remains nascent and highly fragmented. Current efforts demonstrate the potential for cultural continuity and innovation (Agusniansyah, 2024), yet the body of work lacks the systematic, empirical data required to assess the long-term performance, cost efficacy, and widespread applicability of these hybrid designs. This fragmentation necessitates more dedicated, comprehensive studies to move beyond isolated case studies and establish scalable models for sustainable architectural fusion (Agusniansyah, 2024; Noraidarayanti et al., 2024).	Conduct interdisciplinary design research combining vernacular architectural principles with smart technologies and sustainable materials to create culturally sensitive modern housing.	Bridging traditional wisdom with modern innovation is recognized as a vital pathway for ensuring the future relevance of Banjar architecture. The strategic fusion of vernacular knowledge with contemporary building science—including the integration of smart technologies and eco friendly materials—serves to promote cultural continuity by keeping traditional forms functionally viable. Furthermore, this hybridized approach enhances environmental sustainability in contemporary design, validating traditional principles as a crucial resource for addressing modern architectural challenges (Agusniansyah, 2024; Noraidarayanti et al., 2024).	Medium
Limited exploration of ethnomathematics and spatial cognition in Banjar architecture	Although some investigations have successfully explored the underlying geometric and mathematical principles embedded within Banjar house design, there remains a critical deficiency in the broader study of spatial cognition and its associated cultural	Expand ethnomathematical research to include spatial organization, construction logic, and cultural cognition, employing mixed methods including cognitive mapping and participatory design.	Expanding research into spatial cognition is essential as it significantly enriches the cultural interpretation of Banjar architecture. By investigating how space is culturally understood and utilized, researchers can transcend purely	Low

	implications. Current research often focuses on quantifiable measurements, neglecting the qualitative aspects of how space is perceived, utilized, and imbued with meaning by occupants. A more extensive investigation into this sociopsychological dimension is required to fully understand the cultural significance of spatial arrangements beyond simple architectural measurements (Paris & Wahyuda, 2022).		geometric analysis (Paris & Wahyuda, 2022). This deeper, culturally grounded understanding of spatial organization is critical for informing the design of future architectural curricula and establishing best practices that ensure culturally sensitive and relevant architectural practice.	
Insufficient documentation and analysis of Banjar religious architecture and its syncretic symbolism	A critical research deficiency exists in the scholarly investigation of Banjar religious architecture, including traditional mosques and associated sacred buildings. The literature contains a limited number of studies that specifically address the complex syncretism between Dayak and Islamic symbolism as manifested through spatial arrangements, roof forms, and ornamental motifs. This oversight restricts a full understanding of how the community's spiritual and historical identity is structurally and symbolically reconciled within its most significant public architecture (Hasanah & Rahmasari, 2020; Aufa, 2012).	Conduct detailed architectural and semiotic studies of Banjar religious buildings, documenting symbolic motifs, spatial typologies, and their cultural-religious meanings.	Investigating religious architecture is essential because these buildings embody the complex cultural syncretism that is foundational to understanding the comprehensive Banjar identity. By analyzing how traditional mosques and other religious structures integrate Dayak and Islamic symbols and forms, researchers can gain crucial insights into the community's spiritual worldview and historical narratives (Hasanah & Rahmasari, 2020; Aufa, 2012). This knowledge is indispensable for informing contemporary religious building design, ensuring that new structures are culturally respectful, contextually relevant, and accurately reflect the unique, hybridized	Medium

			heritage of the Banjar people.	
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CONCLUSION

The collective body of research on Banjar culture's influence on traditional architecture in South Kalimantan reveals a richly layered interplay between cultural identity, environmental adaptation, and historical transformation. Banjar traditional architecture, particularly the Bubungan Tinggi and Lanting house typologies, emerges as distinct yet dynamically shaped by Malay coastal origins, Dayak, Javanese, and Islamic cultural influences. These influences are intricately woven into the spatial organization, roof forms, and ornamental lexicons, which serve as cultural symbols reflecting social stratification, religious beliefs, and family identity. The presence of unique interior elements such as Tawing Halat and floral and calligraphic carvings further underscore the depth of cultural symbolism embedded in architectural features.

Environmentally, Banjar vernacular architecture demonstrates sophisticated passive design strategies finely attuned to the tropical, humid, and swampy conditions of South Kalimantan. The high-pitched roofs of Bubungan Tinggi houses minimize solar heat gain, while natural ventilation and elevated stilt foundations optimize thermal comfort and resilience against flooding. Similarly, the floating Lanting houses exemplify adaptive architecture that harmonizes with riverine environments, enabling mobility and flood mitigation aligned with the Banjar's riverine lifestyle. Computational simulations and bioclimatic analyses substantiate these environmental adaptations, though future-proofing these designs against climate change remains an area needing further exploration.

Historically, Banjar architecture is a product of acculturation processes, integrating indigenous forms with external cultural elements, including Malay, Dayak, Javanese, and Islamic motifs. This convergence is evident in palace reconstructions and religious architecture, where symbolic spatial arrangements and ornamentation express syncretic cultural values. Comparative studies highlight both shared and unique architectural traits between Banjar and neighboring ethnic groups, though comprehensive analytical frameworks to quantify these influences are still limited.

Construction techniques reveal a sophisticated use of sustainable local materials, especially wood, applied in unique structural and foundation systems adapted for swampy terrain. The Kalang foundation and wooden pillar systems demonstrate durability and load distribution optimized for challenging environmental contexts. However, traditional materials face challenges such as scarcity, structural degradation, and need for modernization, prompting research into innovative solutions like EPS floating technology and integration with smart home systems.

Preservation efforts recognize the cultural significance of Banjar traditional houses but face threats from urbanization, material decline, and socio-economic shifts, particularly impacting river-based vernacular forms like the Lanting house. Modern reinterpretations and adaptive reuse strategies aim to balance heritage conservation with contemporary needs, yet systematic preservation frameworks and community engagement remain critical for sustaining Banjar architectural identity.

In sum, the literature collectively portrays Banjar traditional architecture as a culturally rich, environmentally responsive, and historically evolving practice embodying local wisdom and identity. Future research should deepen quantitative analyses of comparative cultural influences, address climate resilience adaptations, and develop integrated preservation models that honor Banjar heritage while accommodating modern living.

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