



ICCAUA Proceedings Journal

Proceedings of the international conference of contemporary affairs in architecture and urbanism-ICCAUA
Volume 9 (December 2026), 2610216

ICCAUA
Proceedings Journal
<https://journal.iccaua.com/>

Journal homepage: <https://journal.iccaua.com/>

DOI: <https://doi.org/10.38027/ICCAUA2026EN0216>

Negotiating Multicultural Identity: From Structural Authenticity to Ornamental Representation in Medan's Architecture

* ¹ Aulia Muflih Nasution, ² Yunita Syafitri Rambe, ³ Weldy Eka Saputra

^{1 & 2} Department of Architecture, Faculty of Engineering, Medan Area University, Medan, Indonesia

³ Department of Architecture and Interior Design, College of Engineering, University of Bahrain, Sakheer, Kingdom of Bahrain

¹ E-mail: auliamuflih@staff.uma.ac.id, ² E-mail: yunirambe@staff.uma.ac.id, ³ E-mail: wsaputra@uob.edu.bh

Abstract

Received: 29.04.2026
Revised: 27.06.2026
Accepted: 01.07.2026
Available online: 10.07.2026

Copyright © 2026 by the author(s).
All rights reserved.

This article is published under an open-access model and is made available in accordance with the terms of the Creative Commons Attribution 4.0 International Licence (CC BY).



The publisher maintains a neutral stance concerning jurisdictional claims in published maps and institutional affiliations.

This article has been selected and peer-reviewed for publication in this journal as part of the 9th International Conference of Contemporary Affairs in Architecture and Urbanism, held on 7–8 May 2026 in Istanbul, Türkiye.

In multicultural cities, architecture visually amplifies or marginalizes competing cultural identities. Medan - defined by Malay, Batak, Chinese, Tamil, and colonial influences - exemplifies how vernacular elements are selectively integrated into urban space. Design literature often overlooks how cultural priorities shift across building typologies, and no unified analytical framework has previously been applied to systematically distinguish authentic structural vernacular engagement from ornamental commodification across Medan's multi-ethnic built environment. This study analyzes twelve buildings (1884–2023) spanning religious, governmental, and hospitality functions using the Authenticity-Commodification Analytical Framework (ACAF), a novel five-type typological instrument developed and validated through this research. Field observations reveal a critical dichotomy: religious buildings preserve authentic structural vernacular (particularly Malay-Islamic, Tamil, and Batak-Christian forms) to assert cultural legitimacy, whereas hospitality and civic projects adopt surface ornamentation as branding tools. This marks a transition from vernacular as 'shelter' to 'symbol' - from cultural assertion to commodification. The study advances three theoretical contributions: (1) the ACAF as a replicable classification instrument for multicultural urban built environments; (2) empirical demonstration that owner identity, not building function or era, is the primary predictor of vernacular engagement mode; and (3) evidence that vernacular tradition is an evolutionary continuum persisting across 139 years and multiple structural technologies. The framework enables authentic representation in Medan's urban heritage and is transferable to other postcolonial multicultural cities in Southeast Asia.

Keywords: Neo-vernacular design; Multicultural architectural identity; Commodification of culture; Architectural authenticity; Urban cultural negotiation.

1. Introduction

1.1 Background and Context

Medan, the capital of North Sumatra Province and the fourth-largest city in Indonesia, stands as one of Southeast Asia's most architecturally diverse urban environments. Formed through successive waves of colonial administration, ethnic migration, and economic development from the mid-nineteenth century onward, its built environment embodies the layered coexistence of multiple cultural traditions - Malay, Batak, Chinese Peranakan, Tamil, and Dutch Colonial - each of which has produced distinct vernacular architectural traditions within a shared urban landscape (Al Zufri et al., 2025; Situmorang et al., 2025). This multicultural architectural plurality makes Medan a uniquely productive site for investigating how vernacular traditions is maintained, adapted, and transformed across different building types, institutional contexts, and historical periods.

The contemporary built environment of Medan presents a complex and unresolved tension between vernacular architectural authenticity and the commodification of cultural identity. In some buildings, vernacular traditions are embedded in the primary load-bearing structural fabric - inseparable from the building's structural integrity and spatial organization. In others, the same traditions appear as applied ornamental elements on modern reinforced concrete structures, deployed for commercial, political, or institutional purposes. This distinction - between architecture in which vernacular tradition constitutes the structural system and architecture in which it constitutes a decorative layer - is the central analytical problem that this research addresses.

The relevance of this inquiry extends beyond Medan to the broader regional and global discourse on heritage conservation, cultural identity, and the commodification of tradition in rapidly urbanizing multicultural societies. As Indonesian cities accelerate their urban development, the risk of reducing rich vernacular architectural traditions to superficial aesthetic branding - detached from the structural, spatial, and cosmological systems in which they originated - grows correspondingly (Alnaim & Alnaim, 2026). A rigorous analytical framework capable of distinguishing authentic vernacular engagement from its commodified forms is therefore both theoretically necessary and practically urgent.

This study is grounded in a semiotic analytical tradition previously applied by the research team to vernacular buildings in North Sumatra. Building on the application of Jencksian semiotic trichotomy to the KAKR Bamboo Hall - a vernacular

structure in the Buluh Awar area - which established that semiotic trichotomy indicators and Peirce's semiotic theory are compatible with vernacular architectural analysis in this regional context (Rambe & Nasution, 2023), the present study extends this framework into the multi-ethnic urban environment of Medan through the development of the Authenticity-Commodification Analytical Framework (ACAF).

Contemporary neo-vernacular practice in the Medan metropolitan area provides further grounding for this inquiry. The application of neo-vernacular Melayu design principles in contemporary sports facilities within the Medan metropolitan region (Arifin et al., 2024) demonstrates that TYPE 4 - structurally-integrated vernacular revival with authentic motivation - represents an emerging design paradigm actively practiced by architects in this urban context, rather than a purely theoretical category.

1.2 Problem Statement and Research Gap

Despite the richness of Medan's multicultural architectural heritage, a significant gap exists in existing scholarship. Existing studies have documented individual buildings or single ethnic traditions in isolation; none has undertaken a systematic comparative analysis across the full spectrum of Medan's multi-ethnic built environment using a unified analytical framework (Faisal & Suwanto, 2019). This gap means that the critical distinction between structural vernacular authenticity and ornamental commodification has not been theoretically elaborated or empirically tested in the Medan context.

A further problem is the absence of a typological framework capable of accommodating contemporary buildings - constructed with modern reinforced concrete and steel - that nonetheless engage authentically with vernacular traditions for genuine religious, cultural, or civic identity purposes; García-Esparza (2015) identifies this as one of the 'unresolved problems' in vernacular architecture scholarship, noting that existing epistemological paradigms have not produced consensus on how contemporary buildings should be assessed against vernacular criteria. Without such a framework, contemporary buildings built by living communities of faith are either incorrectly classified as commodified or excluded from vernacular architectural analysis entirely. This study addresses both gaps through the development and application of the Authenticity-Commodification Analytical Framework (ACAF).

1.3 Objectives and Hypotheses

This study pursues four primary objectives: (1) to develop and apply the ACAF for classifying vernacular architectural engagement across a purposive sample of twelve buildings in Medan; (2) to produce a systematic comparative typological analysis of six distinct vernacular traditions across five functional building categories; (3) to identify the structural, ownership, and motivational factors that predict the mode of vernacular engagement; and (4) to advance theoretical understanding of vernacular architectural continuity and transformation in multicultural postcolonial cities.

Hypothesis 1: Religious and heritage buildings will demonstrate higher degrees of structural vernacular authenticity than commercial and civic buildings.

Hypothesis 2: Owner identity - specifically, the nature of the owner's relationship to the vernacular tradition - will be a stronger predictor of typological classification than building function or construction era.

Hypothesis 3: Contemporary buildings using modern construction technology can authentically continue vernacular traditions, and such continuation is analytically distinguishable from commercial commodification.

1.4 Significance

This study makes three primary contributions to the scholarly literature on vernacular architecture, heritage conservation, and multicultural urban studies. First, it develops and validates the Authenticity-Commodification Analytical Framework (ACAF) as a replicable five-type typological instrument for classifying vernacular architectural engagement - applicable beyond Medan to other multicultural Indonesian cities and postcolonial cities across Southeast Asia, including Penang, Singapore, and Yangon. This fills a documented gap in the scholarship, as no prior typological instrument has systematically distinguished structural authenticity from ornamental commodification while simultaneously accommodating diaspora-adopted traditions and contemporary neo-vernacular production.

Second, this study provides the first systematic comparative architectural typology of Medan's multi-ethnic built heritage, documenting six distinct vernacular traditions - Malay-Islamic, Batak, Chinese Peranakan, Tamil Hindu, Dutch Colonial, and Contemporary Pan-Islamic - across twelve buildings spanning 139 years of urban construction. This constitutes a foundational reference dataset for future heritage conservation, urban planning, and architectural research in North Sumatra. Third, the research advances theoretical understanding of vernacular architectural continuity by empirically demonstrating that vernacular tradition is an evolutionary continuum: the 114-year Islamic architectural arc from Masjid Raya Al-Mashun (1909, TYPE 1) to Masjid Agung Medan (2023, TYPE 4) provides direct evidence that authentic vernacular engagement persists across radically different construction technologies when living cultural communities continue to deploy vernacular vocabularies for genuine identity purposes.

The paper is organized into five sections. Section 2 presents the materials and methods, including the study design, purposive sample selection, field documentation procedures, element inventory protocol, and the five-type ACAF coding system. Section 3 presents the results across four dimensions: typological distribution, function-type correlation, owner-type prediction, and the 139-year construction timeline. Section 4 discusses the findings in relation to existing scholarship, addresses the study's strengths and limitations, and outlines implications for heritage conservation practice and future research. Section 5 presents the conclusions, including the contributions of the study, its limitations, and recommendations for future research.

2. Materials and Methods

2.1 Study Design and Setting

This study employs a qualitative-descriptive, multiple-case research design to analyze how vernacular architectural elements function across different building types, cultural traditions, and construction eras in Medan, North Sumatra. Grounded in the interpretive paradigm, the research examines how architectural forms represent the cultural identities of Malay-Islamic, Batak, Chinese Peranakan, Tamil Hindu, Dutch Colonial, and Contemporary Pan-Islamic communities across a 139-year construction arc (1884–2023). The multiple-case approach enables systematic cross-case comparison while preserving the contextual depth required to analyze the complex symbolic and structural dimensions of vernacular architecture (Groat & Wang, 2013). This design is appropriate for developing mid-range theoretical propositions from empirical architectural evidence, as it combines the analytical rigor of comparative typological analysis with the contextual sensitivity of interpretive case study methodology.

The methodological framework is organized into six sequential phases, as illustrated in Figure 1: (1) Research Design, establishing the qualitative-descriptive multiple-case approach; (2) Purposive Sampling, selecting twelve buildings based on tradition representation, functional diversity, and temporal span; (3) Triangulated Data Collection, combining field observation, photographic survey, and archival review; (4) Element Inventory Protocol, applying a six-dimension coding instrument to each building; (5) ACAF Classification, applying the Structural Removal Test and five-type typological coding; and (6) Cross-Case Comparative Analysis, identifying patterns across buildings, owner types, functions, and construction eras.

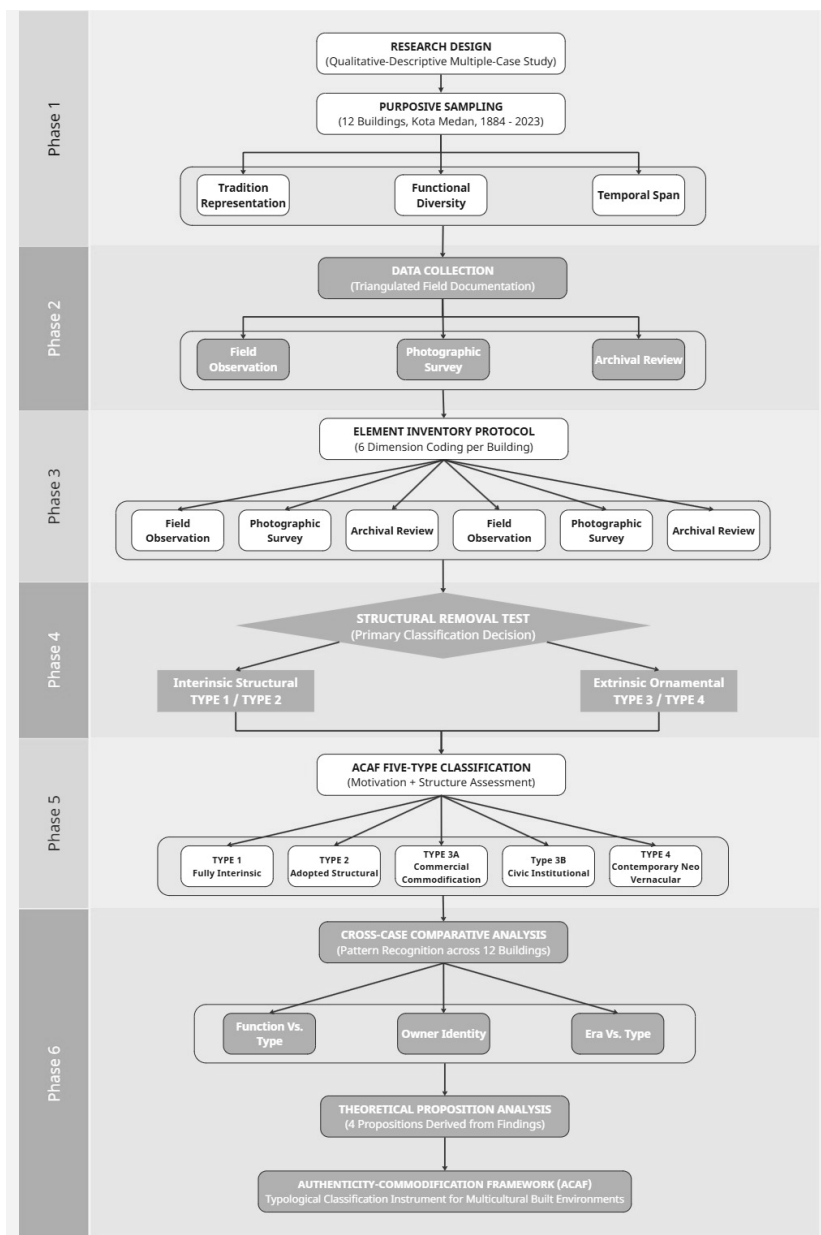


Figure 1. Methodological Framework of the Authenticity-Commodification Analytical Framework (ACAF). (Developed by the Authors).

2.2 Subjects

The study population comprises the full set of publicly accessible, vernacular-engaged buildings in Medan that meet four purposive selection criteria: (1) cultural tradition representation - buildings were selected to represent the six major cultural traditions present in Medan's built environment; (2) functional diversity - the sample covers five functional categories (religious, palatial-heritage, hospitality, civic-governmental, and civic-cultural); (3) temporal span - buildings were selected to cover all three major construction eras identified in the literature (pre-modern masonry, 1884–1955; modern reinforced concrete, 1972–2010; contemporary steel-reinforced concrete, 2001–2023); and (4) architectural accessibility - buildings were required to permit external observation and photographic documentation of primary architectural elements.

The purposive selection strategy is grounded in the theoretical sampling logic of multiple-case research design: cases are selected not for statistical representativeness but for theoretical relevance - their capacity to illuminate the full typological spectrum from maximum structural authenticity (TYPE 1) to commercial commodification (TYPE 3A) and contemporary neo-vernacular continuation (TYPE 4). This approach is consistent with established architectural research methodology (Groat & Wang, 2013) and with the theoretical sampling principles applied in qualitative comparative research (Ibnu et al., 2023).

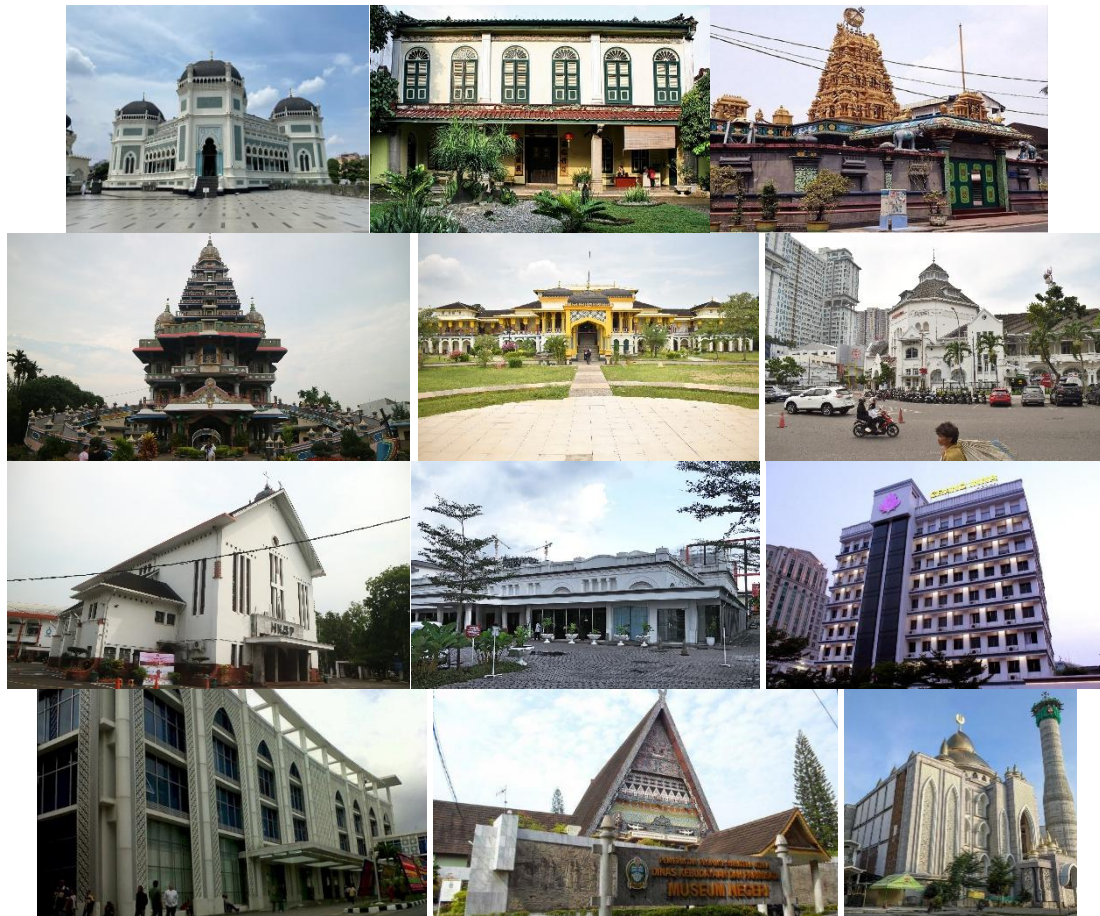


Figure 2. Field Documentation of the Twelve-Building Sample, Kota Medan (1884–2023). Top row (left to right): Masjid Raya Al-Mashun (TYPE 1, 1909); Tjong A Fie Mansion (TYPE 1, 1900); Kuil Shri Mariamman (TYPE 1, 1884). Second row: Graha Maria Annai Velangkanni (TYPE 1, 2001); Istana Maimun (TYPE 1, 1888); Kantor Pos Besar Medan (TYPE 1, 1911). Third row: Gereja HKBP Sudirman (TYPE 2, 1955); Hotel Inna Dharma Deli (TYPE 3A, 2006); Hotel Danau Toba International (TYPE 3A, 1972). Bottom row: Gedung DPRD Sumatera Utara (TYPE 3B, 2010); Museum Negeri Provinsi Sumatera Utara (TYPE 3B, 1982); Masjid Agung Medan (TYPE 4, 2023). (Field photography by the research team).

Table 1 presents the final twelve-building sample, encompassing six distinct vernacular traditions across five functional categories.

Table 1: The Twelve-Building Sample: Purposive Selection for Comparative Typological Analysis.

No.	Building	Year	Cultural Tradition	Function	Structure	Type
1	Masjid Raya Al-Mashun	1909	Multi-trad Islamic (5)	Religious	Pre-mod masonry	TYPE 1
2	Tjong A Fie Mansion	1900	Peranakan Chinese-Malay-European	Heritage	Pre-mod masonry	TYPE 1
3	Kuil Shri Mariamman	1884	Tamil Dravidian Hindu	Religious	Traditional masonry	TYPE 1
4	Graha Maria Annai Velangkanni	2001	Multi-trad Catholic (5)	Religious	Multi-trad masonry	TYPE 1
5	Istana Maimun	1888	Multi-trad Malay Royal (4)	Heritage	Pre-mod masonry	TYPE 1
6	Kantor Pos Besar Medan	1911	Dutch Colonial Vernacular	Civic	Pre-mod masonry	TYPE 1
7	Gereja HKBP Sudirman	1955	Batak-adopted European Protestant	Religious	Pre-mod masonry	TYPE 2
8	Hotel Inna Dharma Deli	2006 (rebuilt)	Malay vernacular (applied)	Hospitality	Modern RC	TYPE 3A
9	Hotel Danau Toba International	1972	Batak vernacular (applied, 3 layers)	Hospitality	Modern RC	TYPE 3A
10	Gedung DPRD Sumatera Utara	2010	Batak civic (applied)	Civic-Govt	Modern RC	TYPE 3B
11	Museum Negeri Provinsi Sumut	1982	7-tradition applied (equal)	Museum	Modern RC	TYPE 3B
12	Masjid Agung Medan	2023	Contemporary Pan-Islamic	Religious-Civic	Modern RC+steel	TYPE 4

Note. TYPE 1 = Fully Intrinsic-Structural; TYPE 2 = Adopted Structural Tradition; TYPE 3A = Commercial Commodification; TYPE 3B = Civic-Institutional Representation; TYPE 4 = Contemporary Neo-Vernacular. RC = reinforced concrete.

2.3 Materials and Equipment

Primary data collection instruments comprised: (1) a calibrated photographic documentation protocol using a digital single-lens reflex (DSLR) camera (minimum 24.2 megapixels) with standardized shooting angles (frontal elevation, secondary elevation, structural details, interior spatial organization, ornamental elements); (2) an architectural element inventory form (paper-based field recording, subsequently digitized) recording each element against six dimensions; (3) published heritage conservation records, including Cagar Budaya designation reports from the Medan Heritage Conservation Office; and (4) peer-reviewed secondary sources on the historical and cultural context of each building. Archival materials consulted included colonial-era architectural records from the Arsip Nasional Republik Indonesia, published monographs on Medan's urban architectural history, and existing scholarly analyses of individual buildings in the sample.

2.4 Procedures and Protocols

Data collection was conducted in two phases. Phase one comprised field documentation visits to each of the twelve buildings between November 2024 and February 2025. At each building, the researcher conducted a systematic external and (where access permitted) internal architectural survey, recording all identifiable vernacular architectural elements against the six-dimension inventory form. Photographic documentation covered a minimum of twelve standardized angles per building, supplemented by detail photographs of structurally or symbolically significant elements. Phase two comprised archival and secondary source review, cross-referencing field observations against published architectural histories, heritage conservation reports, and existing scholarly analyses to establish the historical and cultural provenance of identified elements.

The primary classification decision in the ACAF coding protocol is operationalized through the Structural Removal Test: for each identified vernacular element, the analyst asks - if these elements were removed from the building, would the primary structural integrity of the building be compromised? Elements that are load bearing (columns, walls, arches, vaults, structural frames) and whose removal would compromise structural integrity are classified as intrinsic-structural. Elements that are non-load bearing (applied motifs, decorative screens, surface ornamentation, symbolic finials) and whose removal would not affect structural integrity are classified as extrinsic ornamental. This test converts the theoretical distinction between structural authenticity and ornamental application into a physically observable, replicable criterion that reduces interpretive subjectivity in the primary classification decision (García-Esparza, 2015).

2.5 Data Analysis

Following field documentation and element inventory completion, each building was assessed against the ACAF five-type coding protocol. The ACAF evaluates each building against two primary analytical axes: (1) structural embeddedness - the degree to which vernacular traditions constitute load-bearing elements of the primary building fabric, assessed through the Structural Removal Test; and (2) motivation - the purpose for which vernacular traditions are deployed, assessed through analysis of building commission documentation, ownership records, functional programming, and symbolic-cosmological systems. The combination of these two axes produces the five-type classification: TYPE 1 (Fully Intrinsic-Structural: load-bearing + culturally necessitated); TYPE 2 (Adopted Structural Tradition: load-bearing + diaspora-adopted); TYPE 3A (Commercial Commodification: ornamental + revenue-motivated); TYPE 3B (Civic-Institutional Representation: ornamental + civic mandate); and TYPE 4 (Contemporary Neo-Vernacular: dimensionally-structural + authentic motivation with modern technology).

Cross-case pattern analysis was then conducted across four dimensions: (a) building function versus typological classification; (b) owner identity versus typological classification; (c) vernacular tradition breadth versus typological classification; and (d) construction era versus typological classification. Patterns were identified through systematic comparison of the coded building profiles, with results presented in tabular and graphic form in Section 3. The five-type coding protocol is summarized in Table 2.

Table 2: The Authenticity-Commodification Analytical Framework: Five-Type Coding Protocol.

Type	Label	Primary Criterion	Structural Test	Structural Mode	Motivation
TYPE 1	Fully Intrinsic-Structural	Vernacular tradition IS the primary load-bearing structural system	Remove vernacular → structural compromise	Pre-mod masonry	Religious identity / Cultural necessity
TYPE 2	Adopted Structural Tradition	Vernacular structural system authentically adopted by non-originating community across generations	Remove vernacular → structural compromise	Pre-mod masonry (adopted)	Diaspora community identity
TYPE 3A	Commercial Commodification	Modern RC primary structure + vernacular elements applied ornamentally for commercial revenue	Remove vernacular → RC intact	Modern RC	Commercial revenue / brand identity
TYPE 3B	Civic-Institutional Representation	Modern RC primary structure + vernacular elements applied ornamentally for civic mandate	Remove vernacular → RC intact	Modern RC	Political legitimacy / cultural inclusion
TYPE 4	Contemporary Neo-Vernacular	Modern RC/steel structure + authentic vernacular vocabulary + genuine cultural/religious motivation + structural-symbolic integration	Remove ornament → RC intact; remove structure → symbolism lost	Contemporary RC+steel	Genuine religious faith / civic cultural identity

Note. RC = reinforced concrete. All twelve buildings were classified by applying both the structural removal test (primary axis) and the motivation assessment (secondary discriminating criterion).

3. Results

3.1 Key Findings

The application of the ACAF to the twelve-building sample produced a clear typological distribution. Six buildings (50%) were classified as TYPE 1 (Fully Intrinsic-Structural), representing pre-modern masonry buildings where vernacular traditions constitute the primary load-bearing structural system. One building (8%) was classified as TYPE 2 (Adopted Structural Tradition). Two buildings (17%) were classified as TYPE 3A (Commercial Commodification) and two (17%) as TYPE 3B (Civic-Institutional Representation). One building (8%) was classified as TYPE 4 (Contemporary Neo-Vernacular). Figure 3 illustrates the typological distribution.

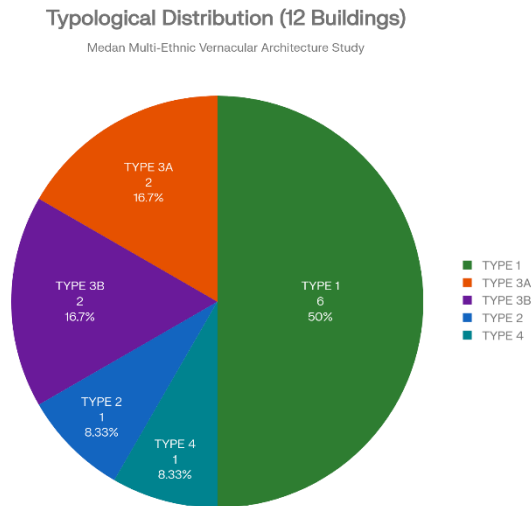


Figure 3. Typological Distribution of the Twelve-Building Sample. (Developed by the Authors).

The most significant cross-cutting finding is the relationship between owner identity and typological outcome. Religious communities and royal patrons consistently produce TYPE 1–2 structural authenticity (n=7); commercial hospitality operators produce TYPE 3A (n=2); civic-political institutions produce TYPE 3B (n=2); and a provincial government religious monument produces TYPE 4 (n=1). This pattern confirms Hypothesis 2: owner identity is a stronger predictor of vernacular engagement mode than building function or construction era alone.

3.2 Structural–Ornamental Dichotomy and Typological Patterns

The ACAF typology reveals a critical structural–ornamental dichotomy that cuts across function, era, and tradition. The structural mode axis divides the sample into two primary clusters: seven buildings (58%) where vernacular tradition is the primary load-bearing system (Types 1–2), and four buildings (33%) where vernacular is applied ornamentally to a modern RC core (Types 3A–3B). One building (TYPE 4, 8%) occupies an analytically distinct contemporary mode in which modern structural technology encodes authentic vernacular symbolism. Figure 4 plots building function against typological classification.

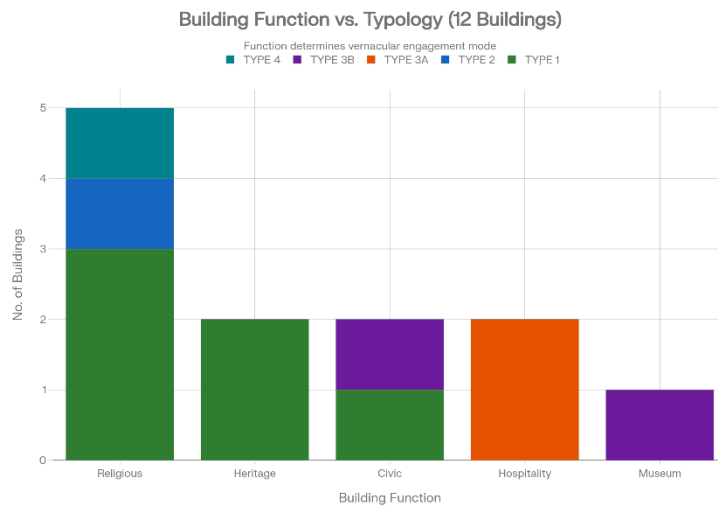


Figure 4. Building Function vs. Typological Classification (n=12). (Developed by the Authors).

A further pattern concerns the breadth-depth relationship in multi-tradition buildings. Buildings with the highest number of vernacular traditions represented (Masjid Raya Al-Mashun: 5 traditions; Graha Maria Annai Velangkanni: 5 traditions; Istana Maimun: 4 traditions) are all TYPE 1 - integrating multiple traditions structurally. By contrast, Museum Negeri Provinsi Sumatera Utara (7 traditions) achieves maximum breadth at the purely ornamental level (TYPE 3B). Figure 5 visualizes this breadth-depth relationship.

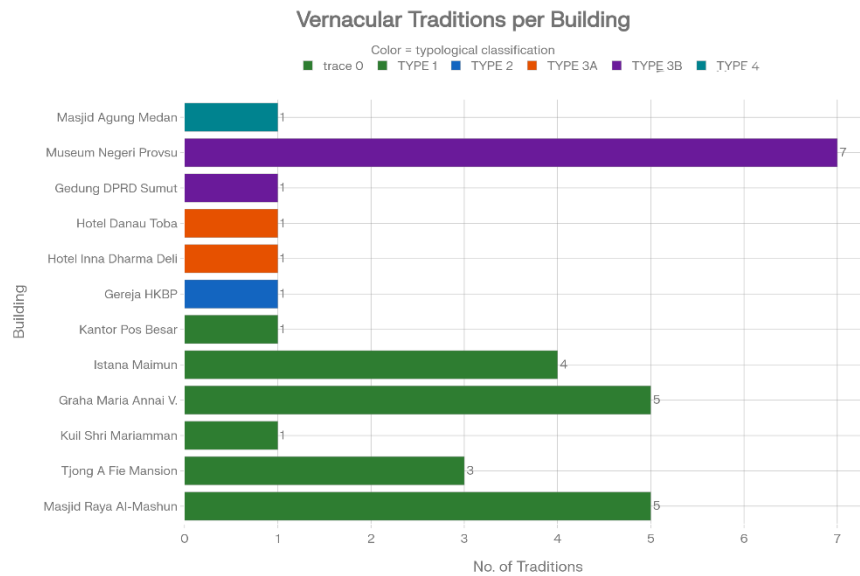


Figure 5. Number of Vernacular Traditions per Building vs. Typological Classification. (Developed by the Authors).

3.3 Statistical Analysis

Given the qualitative-descriptive nature of this multiple-case study, statistical inference is not applicable. However, descriptive analytical summaries support pattern identification across the sample. Table 3 provides a cross-tabulation of owner type against typological classification, demonstrating the predictive consistency of owner identity.

Table 3: Owner Type as Predictor of Typological Classification.

Owner Type	Predicted Type	Pattern	Examples
Religious community / royal patron	TYPE 1–2	Cultural necessity : vernacular tradition IS the community's identity — structural embedding is mandatory	Masjid Raya, Kuil Shri Mariamman, Gereja HKBP, Istana Maimun, Graha Annai Velangkanni
Culturally-embedded local entrepreneur	TYPE 3A	Commercial choice : vernacular tradition applied as brand identity for commercial revenue	Hotel Danau Toba Int'l (Batak founder T.D. Pardede)
State/national institution — heritage site	TYPE 3A	Heritage commodification : applied vernacular to claim cultural legitimacy of historic location	Hotel Inna Dharma Deli
State/national institution — civic mandate	TYPE 3B	Political/civic choice : vernacular applied to legitimize governance or represent cultural diversity	Gedung DPRD Sumut, Museum Negeri Provsu
Provincial government — religious monument	TYPE 4	Contemporary continuation : authentic religious identity expressed through modern technology	Masjid Agung Medan

Note. Owner type is assessed through historical documentation and institutional context analysis. Classification follows the ACAF coding protocol.

3.4 Temporal Analysis: Three-Era Pattern of Vernacular Engagement

Analysis of the 139-year temporal arc (1884–2023) reveals a three-era pattern of vernacular engagement that further confirms Hypothesis 1 and partially complicates Hypothesis 3.

Era 1 — Pre-Modern (1884–1955): Seven buildings (Types 1–2). Traditional structural systems (masonry, timber) are the only available technology. All buildings of this era are authentically vernacular by structural necessity as much as cultural choice. Owner identity determines which tradition is used; the structural mode is determined by available technology.

Era 2 — Modern RC (1972–2010): Four buildings (Types 3A–3B). Modern RC has become the dominant structural technology. Vernacular traditions are now applied ornamentally to modern cores — no longer structurally necessary. Owner identity now determines both tradition and mode: commercial owners → TYPE 3A; civic institutions → TYPE 3B.

Era 3 — Contemporary (2001–2023): Two buildings (TYPE 1 Graha Maria Annai Velangkanni; TYPE 4 Masjid Agung Medan). Contemporary construction reveals a bifurcation: owners with deep structural vernacular commitment (religious orders) can still build TYPE 1 by choosing traditional construction methods; owners expressing contemporary civic-

religious identity use modern technology but maintain authentic symbolic and functional vernacular vocabulary (TYPE 4). Contemporary construction does not inevitably produce commodification.

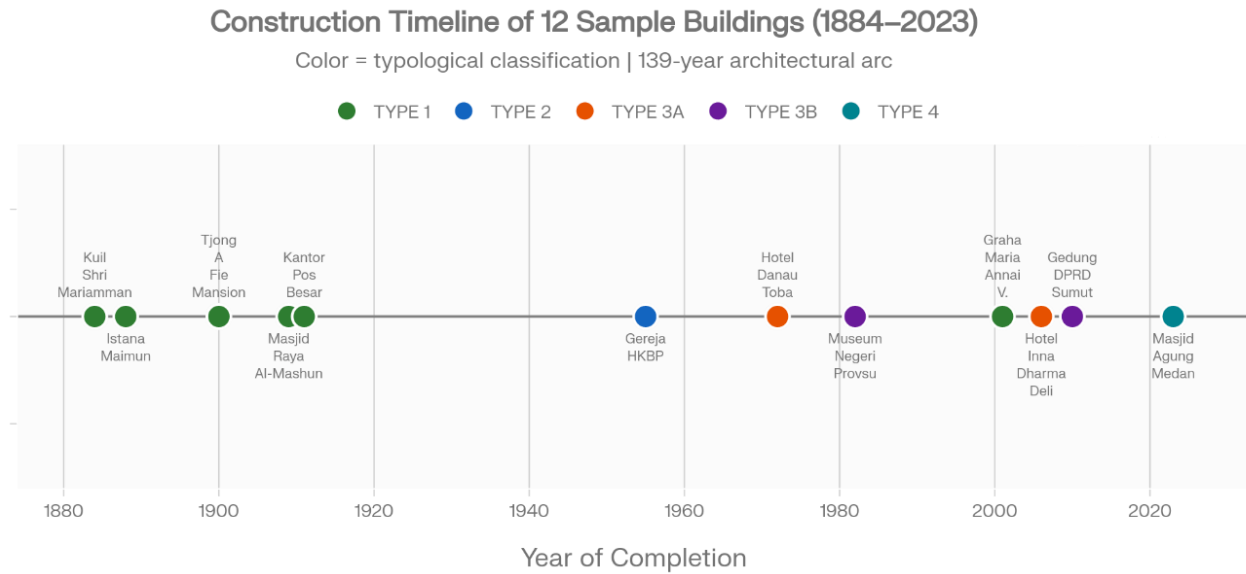


Figure 6. Construction Timeline 1884–2023: Vernacular Engagement by Era. (Developed by the Authors).

4. Discussion

4.1 Interpretation of Key Findings

The results confirm Hypothesis 1: religious and heritage buildings demonstrate significantly higher degrees of structural vernacular authenticity than commercial and civic buildings. All five religious buildings in the sample (Masjid Raya Al-Mashun, Kuil Shri Mariamman, Gereja HKBP Sudirman, Graha Maria Annai Velangkanni, and Masjid Agung Medan) produced TYPE 1, TYPE 2, or TYPE 4 classifications, indicating that vernacular traditions are structurally embedded or authentically motivated in all cases. By contrast, both hospitality buildings (Hotel Inna Dharma Deli and Hotel Danau Toba International) produced TYPE 3A classifications, indicating commercial commodification without structural integration. The two civic-governmental buildings split between TYPE 1 (Kantor Pos Besar, pre-modern masonry) and TYPE 3B (Gedung DPRD Sumut, contemporary RC), reflecting the temporal shift from structurally necessitated vernacular production to institutionally mandated ornamental representation.

The most theoretically significant finding is the confirmation of Hypothesis 2: owner identity is a stronger predictor of typological classification than either building function or construction era. Religious communities - who claim vernacular traditions as essential expressions of their cultural and spiritual identity - consistently produce structural vernacular authenticity regardless of construction era or material technology. This finding resonates with Nursanty et al.'s (2024) analysis of vernacular branding in indigenous village architecture, which similarly identifies community ownership and cultural embeddedness as the primary drivers of authentic vernacular engagement in Indonesian urban contexts. The contrast between Hotel Inna Dharma Deli (TYPE 3A, commercial colonial hotel) and Gereja HKBP Sudirman (TYPE 2, community-owned church) illustrates this principle with particular clarity: both use European-influenced architectural vocabularies, but the motivational difference - commercial revenue versus community religious identity - produces radically different typological outcomes.

Hypothesis 3 is confirmed by the TYPE 4 classification of Masjid Agung Medan: contemporary buildings using modern construction technology can authentically continue vernacular traditions, and this continuation is analytically distinguishable from commercial commodification through two criteria - authentic community motivation (the mosque was funded by Rp 400 billion in public donations from the Muslim community of North Sumatra) and structural-symbolic encoding (the 199-metre minaret height encodes Islamic theology: the Tawhid principle and the 99 Asmaul Husna). This confirms Frampton's (1983) theoretical proposition that critical regionalism - the creative resistance to placeless international modernism through structural engagement with local cultural and environmental conditions - is a viable and productive architectural strategy in contemporary Indonesian urban contexts.

4.2 Comparison with Previous Studies

The ACAF findings extend and refine several key conclusions from the existing literature. The structural-ornamental distinction operationalized in this study confirms and empirically grounds Rapoport's (1969) foundational observation that vernacular architecture is defined not by aesthetic style but by the integration of cultural meaning into structural and spatial systems - a distinction that applied ornamentation cannot replicate. While Rapoport's framework was developed for pre-modern vernacular traditions, this study demonstrates that the same structural-embeddedness criterion applies to contemporary buildings: the distinction between Masjid Agung Medan (TYPE 4, authentic structural-symbolic integration) and Hotel Inna Dharma Deli (TYPE 3A, applied surface ornament) is consistent with Rapoport's foundational criterion regardless of the construction technology employed.

The multi-tradition synthesis observed in TYPE 1 buildings - particularly Tjong A Fie Mansion (Chinese Peranakan + Malay + European), Masjid Raya Al-Mashun (five Islamic traditions), and Graha Maria Annai Velangkanni (five syncretic traditions) - supports and extends Hidayat and Hubner's (2025) recent analysis of Peranakan Chinese architectural

acculturation in Lasem's cultural landscape. Hidayat and Hubner identify multi-tradition synthesis as an authentic form of cultural production when it emerges from the lived identity of hybrid cultural communities; this study confirms this proposition across three additional multi-tradition buildings and introduces the contrasting case of Museum Negeri Provsu (TYPE 3B), where the same quantity of traditions (seven) are represented ornamentally for institutional purposes - demonstrating that tradition breadth does not independently indicate authenticity.

The commodification pattern observed in TYPE 3A buildings aligns with MacCannell's (1973) concept of staged authenticity in tourism settings, where cultural markers are selectively deployed for visitor consumption in ways that simulate rather than represent genuine cultural practice. Both Hotel Inna Dharma Deli and Hotel Danau Toba International deploy vernacular motifs (Malay and Batak, respectively) as commercial signifiers targeting tourism markets, consistent with MacCannell's staged authenticity model. However, this study refines MacCannell's framework by demonstrating that the distinction between staged and genuine authenticity can be empirically assessed through architectural analysis of structural integration - not merely through sociological analysis of visitor experience or commercial programming.

The TYPE 4 classification of Masjid Agung Medan advances Frampton's (1983) critical regionalism framework into the contemporary Indonesian urban context. Frampton argued that critical regionalism resists both historical revivalism and placeless modernism by engaging critically with local topographic, climatic, and cultural conditions through modern tectonic means. The Masjid Agung Medan exemplifies this strategy: its 199-metre RC-and-steel minaret is neither a reproduction of historical masonry minarets nor a culturally neutral modern structure, but a contemporary Islamic architectural proposition that encodes genuine theological content through structural dimension. This represents what Schneider (2023) describes as the critical regionalist project of 'rooting modernity in place' - deploying modern structural technology as a vehicle for authentic cultural expression rather than cultural erasure.

The finding that owner identity is the primary predictor of typological classification extends Alnaim and Alnaim's (2026) recent analysis of vernacular architecture integration in contemporary Saudi urban regeneration. Alnaim and Alnaim similarly identify institutional ownership structures as the primary determinant of whether vernacular traditions are authentically integrated or superficially applied in contemporary urban development projects. Taken together, these findings suggest that the owner-identity prediction principle extends beyond the Indonesian context to other postcolonial Muslim-majority societies undergoing rapid urban modernization - a finding with significant implications for heritage conservation policy in multiple national contexts.

4.3 Strengths and Limitations

The primary strength of this study is the rigorous operationalization of the structural-ornamental distinction through the Structural Removal Test - a transparent, replicable criterion that reduces interpretive subjectivity in the primary classification decision and enables independent validation of the typological outcomes. The twelve-building sample, while purposive rather than random, covers the full typological spectrum from TYPE 1 to TYPE 4, providing comprehensive empirical grounding for the five-type framework. The 139-year temporal span and six-tradition breadth provide an unusually rich comparative basis for the theoretical propositions advanced.

The primary limitation is sample size: twelve buildings, while appropriate for qualitative multiple-case research design, limits statistical generalizability. The findings represent typological patterns across twelve purposively selected buildings and cannot be extended to the full population of vernacular-engaged buildings in Medan without further sampling. A second limitation concerns documentary completeness: for several buildings constructed in the late 19th and early 20th centuries, complete original architectural drawings and construction records are not publicly available, requiring reliance on triangulated secondary sources and observable evidence for the historical analysis. A third limitation is geographic scope: the research is delimited to Kota Medan, and the typological patterns identified may not transfer directly to other Indonesian cities with different ethnic compositions, economic structures, and historical trajectories.

4.4 Implications and Future Directions

The confirmation of all three hypotheses carries significant implications for heritage conservation policy, architectural practice, and future research. For heritage conservation policy, the finding that owner identity is the primary predictor of vernacular engagement mode suggests that policies seeking to preserve or promote vernacular architectural continuity should prioritize support for culturally embedded ownership structures - religious communities, cultural heritage organizations, and local family custodians - rather than focusing exclusively on building age or construction technology. The TYPE 1 and TYPE 2 buildings in this sample (six of twelve) are all maintained by active cultural or religious communities; the building fabric is preserved as a direct consequence of living community stewardship, not primarily because of regulatory protection. Heritage conservation policies that fail to support these ownership structures risk the gradual transformation of TYPE 1 structural vernacular buildings into TYPE 3B civic institutional representations - a process that this study identifies as a fundamental loss of vernacular authenticity even if the physical fabric is nominally preserved.

For architectural practice, the TYPE 4 classification of Masjid Agung Medan demonstrates that authentic contemporary vernacular production is achievable through modern construction technology when structural-symbolic integration is pursued deliberately and community motivation is genuine. The ethical challenge for practitioners engaged in TYPE 3 commercial or civic projects is to distinguish respectful cultural reference from superficial appropriation - a distinction that this study demonstrates is empirically assessable through architectural analysis. Practitioners are encouraged to consult the ACAF coding protocol as a diagnostic instrument for evaluating the authenticity of vernacular engagement in their own design work.

For future research, the most productive directions are: (1) cross-city validation of the ACAF in other Indonesian multicultural cities (Palembang, Surabaya, Makassar) to test whether the five-type spectrum is sufficiently general or requires city-specific adaptation; (2) longitudinal studies tracking TYPE 3 buildings over 10–20 year periods to

investigate whether continued community engagement can produce transitions toward more structurally authentic vernacular engagement; and (3) community-based participatory research investigating how building communities themselves understand and value the vernacular elements in their buildings - providing an important validity check on the framework's classification criteria from the perspective of the cultural communities whose traditions are being analysed.

5. Conclusions

5.1 Summary of Key Findings

This study has demonstrated, through the comparative typological analysis of twelve buildings in Kota Medan spanning 139 years and six cultural traditions, that vernacular architectural engagement in multicultural postcolonial cities operates across a five-type spectrum - from maximum structural authenticity (TYPE 1: Fully Intrinsic-Structural) to applied ornamental commodification (TYPE 3A: Commercial Commodification) and authentic contemporary continuation (TYPE 4: Contemporary Neo-Vernacular). The findings directly confirm all three hypotheses. Hypothesis 1 is confirmed: religious and heritage buildings demonstrate significantly higher degrees of structural vernacular authenticity than commercial and civic buildings; all five religious buildings in the sample produced TYPE 1, TYPE 2, or TYPE 4 classifications, while both hospitality buildings produced TYPE 3A classifications. Hypothesis 2 is confirmed: owner identity - specifically, the nature of the owner's relationship to the vernacular tradition - is a stronger predictor of typological classification than either building function or construction era; religious communities consistently produce structural authenticity while culturally unembedded commercial institutions consistently produce ornamental commodification. Hypothesis 3 is confirmed: the TYPE 4 classification of Masjid Agung Medan demonstrates that contemporary buildings using modern reinforced concrete and steel construction can authentically continue vernacular traditions, and this continuation is analytically distinguishable from commercial commodification through the structural-symbolic integration criterion and the community motivation criterion.

5.2 Implications of the Findings

The most significant theoretical implication of this study is the empirical demonstration that vernacular architectural tradition is an evolutionary continuum, not a static historical category. The 114-year Islamic architectural arc from Masjid Raya Al-Mashun (1909, TYPE 1: pre-modern masonry) to Masjid Agung Medan (2023, TYPE 4: contemporary RC and steel) provides direct evidence that the same cultural community - Medan's Muslim population - has maintained authentic vernacular engagement across radically different construction technologies for over a century. This challenges analytical frameworks that restrict authentic vernacular architecture exclusively to pre-modern construction systems and demands a more nuanced typology capable of distinguishing authentic contemporary continuation from ornamental commodification. The ACAF, as validated through this study, provides such a typology - one that is both theoretically grounded in the existing scholarship (Frampton, 1983; García-Esparza, 2015; Nursanty et al., 2024) and empirically tested against a comprehensive twelve-building sample.

For practice and policy, the finding that owner identity predicts typological outcome has direct operational implications. Heritage conservation strategies in Medan and comparable multicultural Indonesian cities should target support mechanisms - tax incentives, restoration grants, Cagar Budaya designations - preferentially toward culturally embedded ownership structures, as these are the institutional conditions under which authentic structural vernacular engagement is most reliably produced and maintained. Regulatory frameworks should apply differentiated protection standards: TYPE 1 structural vernacular buildings warrant maximum conservation protection, as the vernacular elements ARE the structural system; TYPE 3 ornamental vernacular buildings warrant flexibility, as the cultural elements are removable and potentially replaceable without structural consequence. This differentiation would produce more targeted and efficient conservation outcomes than current undifferentiated heritage designation approaches.

5.3 Limitations of the Study

This research is subject to three primary limitations. First, the purposive twelve-building sample limits statistical generalizability; the findings represent typological patterns within a theoretically selected sample and cannot be assumed to represent the full population of vernacular-engaged buildings in Medan. Second, documentary limitations - particularly the incomplete availability of original architectural drawings and construction records for pre-modern buildings - required reliance on triangulated secondary sources for the historical analysis of several buildings. Third, the geographic delimitation to Kota Medan means that the typological patterns identified may not transfer directly to other North Sumatran cities with different ethnic compositions and historical trajectories.

5.4 Recommendations for Future Research

Future research should pursue three primary directions. First, cross-city validation of the ACAF should be conducted in other Indonesian multicultural cities - Palembang, Surabaya, Semarang, and Makassar - to test the framework's transferability and identify any city-specific modifications required. Second, longitudinal case studies should track TYPE 3 buildings over 10–20-year periods to investigate whether cultural community engagement can produce transitions toward more structurally authentic vernacular engagement - a question with direct implications for heritage conservation intervention design. Third, community-based participatory research should investigate how the cultural communities associated with each building type understand and value their vernacular architectural traditions - providing an essential validity check on the ACAF's classification criteria from the perspective of the communities whose traditions the framework analyses and seeks to protect.

Author Contributions

Aulia Muflih Nasution conceptualized the study, developed the Authenticity-Commodification Analytical Framework (ACAF), conducted field documentation and building analysis, and wrote the original draft manuscript. Yunita Syafitri Rambe contributed to the methodology design, conducted secondary data analysis, and reviewed and edited the manuscript. Weldy Eka Saputra provided critical scholarly review, contributed to the Discussion and Conclusion sections, and supervised the theoretical grounding of the framework. All authors have read and approved the final version of the manuscript.

Acknowledgements

The authors thank Raihan Apriansyah Irhami and Suci Ramadhani Herman, students at the Architecture Study Program Medan Area University, for their technical assistance in conducting field photographic documentation of the twelve buildings that serve as research subjects in this study. Their contribution was limited to logistical and technical support in the field; the intellectual conception, analysis, and authorship of this work remain solely with the authors.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The study was conducted as independent academic research without external financial support.

Conflicts of Interest

The authors declare no conflicts of interest. The funders had no role in the design of the study, in the collection, analysis, or interpretation of data, in the writing of the manuscript, or in the decision to publish the results.

Data Availability Statement

The data underlying this study are qualitative and descriptive in nature, comprising field observation records, site photographic documentation, archival building records, and analytical outputs developed and synthesized by the authors. These materials are available from the corresponding author upon reasonable request. Raw photographic documentation is retained in the authors' institutional archive. All published sources cited in the manuscript are publicly accessible via their respective repositories or publishers.

Institutional Review Board Statement

Ethical review was not applicable to this study. The research involved no human participants, no animal subjects, no collection of personal or biological data, and no experimental interventions of any kind; accordingly, the study was exempt from ethics committee review. The research consisted exclusively of field observation of publicly accessible architectural buildings, archival documentary analysis, and analysis of published secondary sources. All field observations were conducted in accordance with applicable cultural heritage site protocols and local regulations.

CRedit Author Statement

Aulia Muflih Nasution (lead author): Conceptualisation - originated the research problem, the Authenticity-Commodification Analytical Framework (ACAF), and the overall study design; Methodology - developed the ACAF and the five-type coding protocol, and designed the structural removal test and field observation protocol; Formal Analysis - applied the ACAF to all twelve case study buildings and conducted the comparative typological analysis; Investigation - led field observations; Writing - Original Draft - drafted all sections of the manuscript; Writing - Review & Editing - revised and finalized the manuscript; Visualization - designed all tables, figures, and the ACAF diagram; Project Administration - coordinated the overall research project.

Yunita Syafitri Rambe (field coordination): Resources - organized, supervised, and guided the architecture students in conducting field photographic documentation of all twelve building subjects; Data Curation - managed and organized the photographic and field documentation dataset; Investigation - contributed to field data collection logistics.

Weldy Eka Saputra (methodology development): Methodology - contributed to the refinement and operationalization of the research methodology, particularly the field observation protocol and the element inventory instrument; Writing - Review & Editing - reviewed the manuscript and provided critical feedback; Validation - cross-checked typological classifications against independent documentation sources.

References

- Al Zufri, A. Z., Pujiati, P., Suri, N., & Rahimah, R. (2025). Interethnic Interaction in Medan: Challenges and Opportunities in a Multicultural Society. *Warisan: Journal of History and Cultural Heritage*, 5(3), 272–278. <https://doi.org/10.34007/warisan.v5i3.2586>
- Alnaim, M. M., & Alnaim, M. A. (2026a). Integrating Vernacular Architecture into Contemporary Urban Regeneration: Heritage, Identity and Modernization in Saudi Cities. *Land*, 15(3). <https://doi.org/10.3390/land15030494>
- Andrian, F., & Muflih Nasution, A. (2024). Pendekatan Arsitek Franky Parulian Simanjuntak pada Pengembangan Simarjarunjung Hound Sky. *Jurnal Arsitektur ALUR*, 7(1). <https://doi.org/10.54367/alur.v7i1.3511>
- Arifin, Y., Nasution, A. M., & Suprayitno. (2024). Penerapan Konsep Arsitektur Neo-Vernakular Melayu Pada Stadion Indoor Tennis di Deli Sport City. *Dearsip*, 4(1). <https://doi.org/10.52166/dearsip.v4i01.6235>
- Asquith, L., & Vellinga, M. (2006). *Vernacular Architecture in the Twenty-First Century: Theory, education and practice*. Taylor & Francis.
- Bahga, S., & Raheja, G. (2019). A study of regional assertions in the architecture of Delhi from the 1970s to the present. *Buildings*, 9(5). <https://doi.org/10.3390/buildings9050108>

- Broadbent, G., Bunt, R., & Jencks, C. (1980). *Signs, Symbols and Architecture* (G. Broadbent, R. Bunt, & C. Jencks, Eds.). The Pitman Press.
- Chandra, A. W., Hantono, D., Purwantiastning, A. W., Prayogi, L., Sari, Y., & Yandri, S. (2024). The Identification of Ethnic Architecture Application on the Beringharjo Market Building in Yogyakarta. *International Journal of Architecture and Urbanism*, 8(1), 131–141. <https://doi.org/10.32734/ijau.v8i1.14322>
- Colombijn, F., & Lindblad, J. Thomas. (2002). *Roots Of Violence in Indonesia: Contemporary violence in historical perspective*. KITLV Press.
- Eco, U. (1997). Function and Sign: The Semiotics of Architecture. In *Rethinking Architecture: A reader in cultural theory* (pp. 173–195). Routledge.
- Faisal, I., & Suwanto, H. (2019). The Study of Indisch Architecture Development as an Effort in Preserving the Heritage of Colonial History in Medan. *Budapest International Research and Critics Institute (BIRCI-Journal) : Humanities and Social Sciences*, 2(4), 207–214. <https://doi.org/10.33258/birci.v2i4.583>
- Foster, Hal. (1983). *The anti-aesthetic : Essays on postmodern culture*. Bay Press.
- Frampton, K. (1983). Towards a Critical Regionalism: Six Points for an Architecture of Resistance. In Foster, Hal (Ed.), *The Anti-Aesthetic: Essays on Postmodern Culture*. Bay Press.
- García-Esparza, J. A. (2015). Epistemological paradigms in the perception and assessment of vernacular architecture. In *International Journal of Heritage Studies* (Vol. 21, Number 9, pp. 869–888). Routledge. <https://doi.org/10.1080/13527258.2012.666755>
- González Martínez, P. (2022). The ‘preservation by relocation’ of Huizhou vernacular architecture: shifting notions on the authenticity of rural heritage in China. *International Journal of Heritage Studies*, 28(2), 200–215. <https://doi.org/10.1080/13527258.2021.1955728>
- Groat, L., & Wang, D. (2013). *Architectural Research Methods* (Second Edition). John Wiley & Sons, Inc.
- Aziz Amen, M., & Ahmad NIA, H. (2021). The Effect of Cognitive Semiotics on The Interpretation of Urban Space Configuration. *Proceedings Article*, 260–274. <https://doi.org/10.38027/ICCAUA2021227n9>
- Ibnu, I. M., Siswanto, A., Prihatmaji, Y. P., & Nugroho, S. (2023). Typology of wood joint geometry in basemah highland vernacular architecture, south sumatra, indonesia. *Journal of Design and Built Environment*, 23(1), 1–18. <https://doi.org/10.22452/jdbe.vol23no1.1>
- Jencks, C. A. (1977). *The Language of Post-Modern Architecture*. Rizzoli.
- July Hidayat, & Ira Brunchilda Hubner. (2025). Heritage Transformation and Identity Construction: Peranakan Chinese Architecture in Lasem’s Cultural Landscape. *Herança*, 8(4), 27–50. <https://doi.org/10.52152/heranca.v8i4.1189>
- Kirshenblatt-Gimblett, B. (1998). Destination Culture: Tourism, Museums, and Heritage. In *American Anthropologist* (Vol. 101, Number 3). University of California Press.
- Kusno, A. (2000). *Behind the Postcolonial: Architecture, Urban Space and Political Cultures in Indonesia*. Routledge, Taylor & Francis Group.
- MacCannell, D. (1973). Staged Authenticity: Arrangements of Social Space in Tourist Settings. *American Journal of Sociology*, 79(3), 589–603. <https://doi.org/10.1086/225585>
- Nursanty, E., Cauba, A. G., & Waskito, A. P. (2024). Vernacular branding: sustaining city identity through vernacular architecture of indigenous villages. *Place Branding and Public Diplomacy*, 20(4), 482–503. <https://doi.org/10.1057/s41254-024-00349-2>
- Nursanty, E., Rusmiatmoko, D., & Widianara, I. W. A. (2024). Bridging traditions: Placemaking and authenticity in architecture for city branding. *Architecture Papers of the Faculty of Architecture and Design STU*, 29(3), 15–24. <https://doi.org/10.2478/alfa-2024-0014>
- Oliver, P. (1997a). *Encyclopedia of Vernacular Architecture of the World, Volume 1* (P. Oliver, Ed.). Cambridge University Press.
- Oliver, P. (1997b). *Encyclopedia of Vernacular Architecture of the World, Volume 2* (P. Oliver, Ed.). Cambridge University Press.
- Rambe, Y. S., & Nasution, A. M. (2023). Communication of building in Charles Jencks semiotics at KAKR Bamboo Hall: Vernacular buildings and semiotic trichotomy. *ARTEKS : Jurnal Teknik Arsitektur*, 8(3), 367–376. <https://doi.org/10.30822/arteks.v8i3.2224>
- Rapoport, A. (1969). *House Form and Culture*. Prentice-Hall, Inc.
- Saputra, W. E., Cheris, R., & Ravelino, P. (2022). Vernacular Architecture Implementation on Shopping Center Buildings Design in The City of Pekanbaru. *Jomard Publishing*, (New Design Idea Special Issue), 76–86.
- Schneider, N.-C. (2023). Critical Regionalism. *RePLITO*. <https://doi.org/10.21428/f4c6e600.53985a86>
- Situmorang, S. S., Situmorang, M., Lumban Gaol, L. C., Pakpahan, E. N., & Simangunsong, L. E. (2025). Medan as a Multicultural City: Ethnic and Cultural Dynamics in the Late 19th Century. *Warisan: Journal of History and Cultural Heritage*, 6(1), 46–53. <https://doi.org/10.34007/warisan.v6i1.2708>
- Wang, N. (1999). Rethinking Authenticity in Tourism Experience. *Annals of Tourism Research*, 26(2), 349–370. [https://doi.org/10.1016/S0160-7383\(98\)00103-0](https://doi.org/10.1016/S0160-7383(98)00103-0)
- Yin, R. K. (2018). *Case Study Research and Applications: Design and Mehods* (Sixth Edition). SAGE Publications.
- Zahiri, N., Dezhdar, O., & Foroutan, M. (2017). Rethinking of critical regionalism in high-vrise buildings. *Buildings*, 7(1). <https://doi.org/10.3390/buildings7010004>