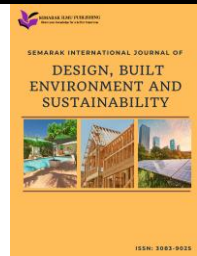




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Challenges in Adapting Vernacular Architecture to the Contemporary: A Systematic Literature Review

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ABSTRACT

Traditional architectural elements in Malaysian vernacular architecture have long reflected deep-rooted cultural, religious, and environmental values, offering a sustainable and contextually responsive approach to building design. However, despite increasing appreciation of these traditions, many regions still face challenges in translating such elements into contemporary architectural practices. This difficulty is further compounded by the limited number of comprehensive studies exploring the sustainable integration of vernacular principles into modern design. This study aims to critically examine the historical evolution and contemporary relevance of vernacular architecture—both in Malaysia and internationally—through a systematic analysis of literature, to identify and synthesize the key challenges in its adaptation to modern architecture, culminating in five overarching thematic findings. A systematic literature review was conducted through a rigorous screening of relevant publications from two major databases, Scopus and Mendeley. Keywords such as "vernacular architecture," "traditional architecture," "contemporary architecture," and "modern design" guided the search process, resulting in 20 primary sources for analysis. The findings reveal five major thematic challenges: (1) Loss of Cultural Identity and Meaning; (2) Conflict Between Traditional Values and Technological Progress; (3) Adaptation Without Appropriation or Superficial Imitation; (4) Incompatibility with Contemporary Needs and Lifestyles; and (5) Institutional, Social, and Political Barriers. Recognising these challenges is essential to ensure that traditional architectural values are meaningfully carried forward, enabling contemporary designs that remain culturally grounded and environmentally responsive.

1. Introduction

The architectural heritage embedded in vernacular and traditional forms reflects generations of accumulated wisdom, environmental responsiveness, and cultural identity. These forms often evolve through local knowledge systems, climate adaptability, and the socio-cultural contexts of specific regions. As urbanization and globalization intensify, architectural practices are increasingly

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influenced by modernist and contemporary trends prioritizing innovation, technological advancement, and efficiency over tradition [10,24]. This has raised questions about the relevance and continuity of traditional architectural values in the context of modern design aspirations. The dialogue between past and present in architecture is not merely stylistic as it touches on sustainability, cultural continuity, and the lived experience of built environments [5].

Despite a growing appreciation for culturally rooted architecture, integrating vernacular values into modern design is complex. Challenges arise due to contrasting priorities: traditional architecture emphasizes locality, craftsmanship, and gradual evolution, whereas modern architecture tends to focus on universality, new materials, and rapid construction processes [17]. This tension creates a disconnect between inherited wisdom and contemporary needs, resulting in either superficial applications of vernacular elements or complete abandonment of traditional principles and values. Moreover, rapid technological development, shifting user expectations, and regulatory frameworks may further hinder authentic integration [19,20]. These tensions demand a systematic investigation to understand not only the nature of these challenges but also the strategies proposed to address them.

Despite numerous efforts and projects in Malaysia and internationally to integrate traditional values and methods into modern design and architecture, there remains a significant gap in research on the effectiveness of these efforts and the key obstacles in implementing them. Thus, this paper explores and synthesizes the key challenges in adapting traditional or vernacular architectural values to modern architectural practice through a systematic literature review. The review is guided by one primary research questions: What are the main challenges in integrating vernacular values into modern architecture? The paper is organized as follows:

- i. Section 2 outlines the methodology of the systematic literature review, including database selection and inclusion criteria.
- ii. Section 3 presents and discusses the main findings, categorized thematically.
- iii. Section 4 offers a critical synthesis and identifies knowledge gaps
- iv. Section 5 concludes with implications for future research and architectural practice.

2. Methodology

2.1 Materials and Methods

Adapting and integrating traditional architectural values into modern design is a recurring challenge experienced across many countries [1,11]. Despite growing interest in heritage conservation and sustainable design, limited research has systematically analyzed the core challenges hindering this adaptation. Understanding these barriers is crucial for assessing the effectiveness of existing design strategies and developing improved approaches [2]. In Malaysia, in particular, there is a notable gap in literature exploring the practical and institutional challenges faced by designers and regulatory bodies in translating vernacular elements into contemporary architectural contexts [2,14].

The main objective of this study is to explore and synthesize the key challenges involved in adapting traditional or vernacular architectural values into modern architectural practice through a systematic literature review (SLR). This research adopts the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to ensure transparency, replicability, and methodological rigor throughout the review process [24].

The literature search was conducted using two major academic databases Scopus and Mendeley chosen for their extensive and credible coverage of peer-reviewed research in architecture and the

built environment [6]. However, no single database can provide a fully comprehensive dataset; therefore, additional screening and manual identification of studies were essential, in line with PRISMA recommendations. This section outlines the four key phases of the literature selection process as prescribed by the PRISMA model: Identification, Screening, Eligibility, and Data Abstraction [24]. Each phase was conducted systematically to ensure that only relevant, high-quality studies addressing the research objective were included.

2.2 Identification

A substantial number of relevant articles for this study were identified through a systematic review process, which comprised of three key stages. The first stage involved the identification of keywords and related terms, guided using thesaurus and dictionaries, and previous research. Once a comprehensive list of relevant terms was compiled, these keywords were used to formulate the search strings for the Scopus and Mendeley databases as shown in Table 1. As a result of this initial search phase, a total of 686 articles were successfully retrieved from both databases.

Table 1

Search string using Scopus and Mendeley database

Scopus	<ol style="list-style-type: none"> 1. (TITLE-ABS-KEY (traditional OR vernacular) AND TITLE-ABS-KEY (values) AND TITLE-ABS-KEY (modern AND architecture)) AND PUBYEAR > 2009 AND PUBYEAR < 2025 AND PUBYEAR > 2009 AND PUBYEAR < 2025 AND (LIMIT-TO (OA , "all")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (DOCTYPE , "ar")) 2. (TITLE-ABS-KEY (vernacular) AND TITLE-ABS-KEY (architecture)) AND PUBYEAR > 2009 AND PUBYEAR < 2025 AND (LIMIT-TO (OA , "all")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English"))
Mendeley	traditional AND values AND to AND modern AND architecture

2.3 Screening

During the screening phase, the pool of potentially relevant studies is assessed for content alignment with the research title and guiding research question. A common screening criterion used in this stage involves selecting studies that specifically address the challenges of adapting traditional architecture to contemporary contexts. At this point, duplicate entries are also removed from the dataset to ensure accuracy. After this initial filtering, the number of articles was reduced from 686 to 77, which were then further assessed in a second round of screening using defined inclusion and exclusion criteria as shown in Table 2. The first inclusion criterion focused on literature that provided original research findings, as these serve as valuable sources of insight. Additionally, only articles published in English were considered, and the review was limited to publications from the years 2009 to 2024.

2.4 Eligibility

A total of 69 articles were brought forward to the third stage of eligibility assessment. At this stage, each article's title and core content were carefully examined to ensure alignment with the study's inclusion criteria and research objectives. As a result of this evaluation, 49 articles were excluded due to irrelevance to the study topic, inconsistencies between their titles and abstracts, or the absence of accessible full-text content with empirical evidence. Consequently, 20 articles remained and were deemed suitable for final review as shown in Table 2.

Table 2

The search criterion is used in the selection process

Criterion	Inclusion	Exclusion
Timeline	2009 – 2024	<2009
Access type	Open access	Restricted Access
Publication stage	Final	In Press
Document Type	Journal (Article)	Conference, Book, Review
Language	English	Non-English

2.5 Data Abstraction and Analysis

An integrative analysis was employed to synthesise findings from diverse research types, including qualitative, quantitative, and mixed-method studies. The purpose was to identify key challenges in adapting traditional architectural values to contemporary design. Theme development began during data collection, where 20 relevant publications were reviewed as shown in Figure 1 to extract concepts aligned with the study's focus.

Initial themes were grouped based on recurring patterns, which were later refined into five core categories: loss of cultural identity, technological conflict, superficial adaptation, spatial incompatibility, and institutional barriers. These themes were collaboratively developed and adjusted through regular comparison and discussion among the authors. To enhance validity, two external experts' specialists in architectural heritage and sustainable design were consulted. Their feedback ensured the relevance and clarity of the final themes, contributing to a robust foundation for the study's discussion and conclusions.

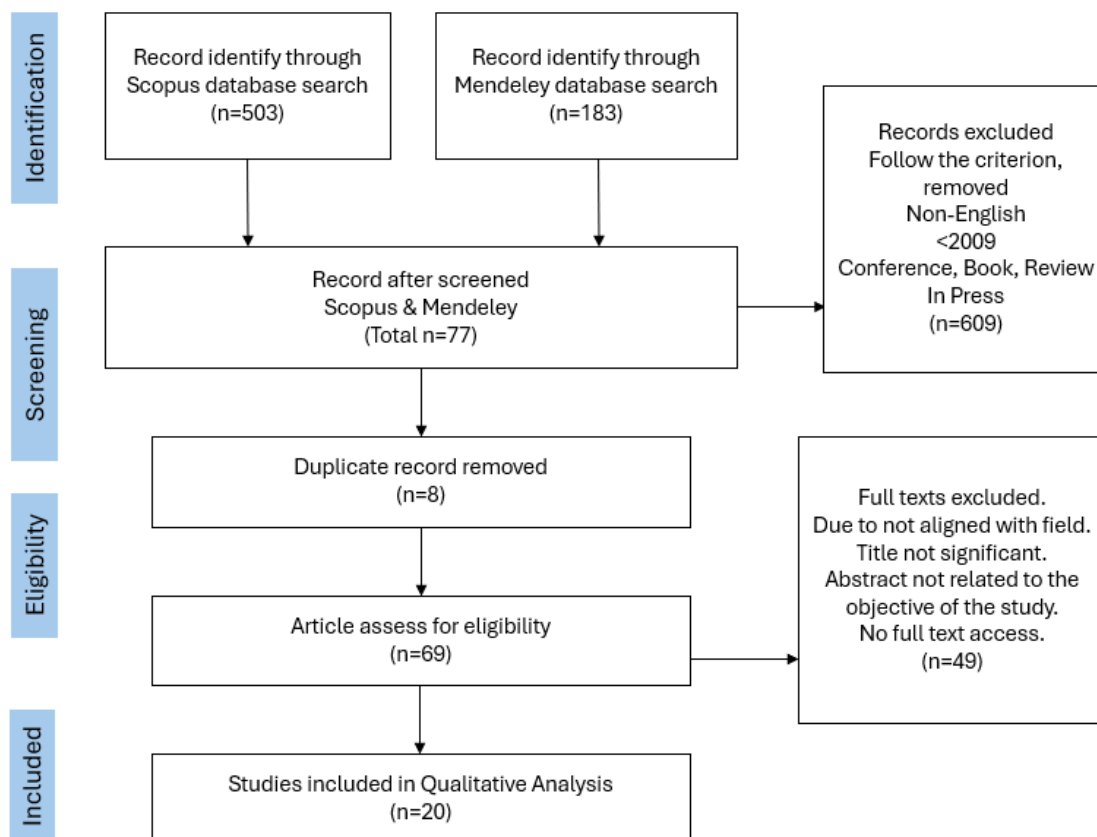


Fig. 1. PRISMA flow diagram of the proposed search study

3. Results and Findings

3.1 Loss of Cultural Identity and Meaning

The dilution of cultural identity in contemporary architecture is a persistent challenge across many contexts. Modernist design ideals emphasizing universality, minimalism, and technological expression often overlook the rich symbolism, rituals, and spatial practices embedded in traditional architecture. In Egypt, for instance, modern housing has become detached from vernacular traditions, creating environments that feel emotionally and culturally foreign to users [9]. Similarly, in Saudi Arabia, Western architectural imports in Riyadh have disrupted the continuity of Najd heritage, with surface ornamentation often replacing deeper cultural meaning [18].

The UAE's rapid urbanization has intensified this phenomenon, producing "placeless" environments and a growing sense of cultural alienation among locals seeking authenticity in the built environment [12]. This loss extends beyond aesthetics, affecting social and familial spatial dynamics.

In Malaysia, Ismail and Alice Sabrina [13] highlights the weakening of national identity in contemporary architecture, where traditional cultural narratives are often reduced to decorative motifs. Rapid urban development and the adoption of global styles have led to a homogenized cityscape, particularly in Kuala Lumpur and Putrajaya, that fails to reflect the country's multicultural and vernacular heritage. While some buildings attempt to incorporate Malay-Islamic principles, these are limited in number and often superficial, lacking integration in form, function, or spatial logic. The result is a built environment increasingly disconnected from local identity and user experience.

3.2 Conflict between Traditional Values and Technological Progress

The transition from traditional building practices to modern architectural technologies often involves a trade-off between cultural authenticity and performance optimization. Techniques refined over generations to suit local climates, and social patterns are frequently dismissed as obsolete in favor of industrialized materials, international standards, and market-driven aesthetics. In Iraq, the shanashil once valued for its passive cooling and privacy has largely disappeared, replaced by facades that ignore environmental and cultural responsiveness [3].

This tension is echoed in China's Yulong Village, where development pressures have undermined ecological and cultural farming traditions. Wu *et al.*, (2024) [23] advocate for integrating local knowledge with green infrastructure, though doing so requires community-led and interdisciplinary approaches that challenge technocratic norms.

In Iran, similar barriers emerge as vernacular strategies struggle to comply with modern codes and investor demands. Kamali and Shiva [15] argues that the conflict lies not only in materials but in worldviews where modern design privileges efficiency and novelty, traditional architecture is embedded in spirituality, climate consciousness, and communal life.

In Malaysia, this conflict is evident in both rural and urban transformations. Traditional Malay houses, once praised for their climatic responsiveness, elevated timber structures, and social flexibility, are increasingly sidelined due to perceptions of inefficiency, high maintenance, and incompatibility with modern construction codes. As housing developments push for cost-effective, mass-produced solutions, the embodied knowledge of traditional craftsmanship such as natural ventilation, modular spatial arrangements, and the use of local, breathable materials like timber and bamboo is rarely adapted into contemporary designs.

A pertinent example is the Rumah Mesra Rakyat (RMR) programme by Syarikat Perumahan Negara Berhad (SPNB), which provides affordable housing for low-income groups. While effective in

addressing cost and access, these homes often employ generic concrete construction and standardized layouts that neglect passive climatic strategies or cultural spatial logic derived from traditional Malay dwellings. Studies have noted that the RMR designs rarely integrate features like the serambi (veranda), raised floors, or permeable walls, all of which contributed to thermal comfort and social interaction in traditional homes [22].

3.3 Adaptation without Appropriation or Superficial Imitation

Superficial references to tradition often through decorative motifs or symbolic facades remain among the most criticized approaches in contemporary architecture. Rather than engaging with the cultural logic of spatial organization, materiality, and climate responsiveness, architects often rely on aesthetic mimicry, resulting in pastiches that lack authenticity and contextual relevance. In Iran, Farjami *et al.*, (2020) [7] critique such visual appropriation that detaches traditional elements from their original meaning and function.

A similar pattern is observed in Saudi Arabia, where contemporary designs referencing Najd architecture frequently replicate textures or massing without embracing core vernacular strategies like shading systems or introverted courtyards [18]. These shallow interpretations risk turning tradition into a branding device rather than a living, adaptive practice.

In Malaysia, this tension is evident in many institutional and commercial buildings that use traditional forms such as pitched roofs, Islamic arches, or batik patterns purely as stylistic embellishments. While such gestures may signal cultural identity at a surface level, they often lack integration with spatial practices that define traditional Malay or Islamic architecture. For instance, the use of Islamic motifs in public buildings like mosques or government offices is often limited to façade treatment, without meaningful incorporation of principles such as orientation, social hierarchy of spaces, or environmental logic. A relevant example is the Istana Budaya (National Theatre) in Kuala Lumpur. While it adopts a traditional Malay roofline inspired by the sirih junjung, its internal spatial layout and material palette largely reflect international performance hall standards. Scholars like Ismail *et al.*, (2015) [4] argue that while the building projects a national identity symbolically, it falls short in embedding traditional planning logic or climatic responsiveness. This suggests a continued struggle to move beyond symbolic representation toward culturally grounded design synthesis.

Conversely, successful adaptation requires a value-based approach that engages with both intangible cultural knowledge and contemporary needs. As seen in Ristić Trajković *et al.*, (2021) [26] Serbian case study, meaningful reinterpretation is possible when behavioral, psychological, and environmental dimensions are foregrounded over formal mimicry.

3.4 Incompatibility with Contemporary Needs and Lifestyles

One of the greatest practical challenges in adapting traditional forms is their mismatch with modern life. Vernacular architecture evolved in response to specific social, environmental, and economic conditions often agrarian, communal, and spatially generous. Today's urbanized societies, with smaller nuclear families, higher mobility, and digital lifestyles, place different demands on buildings and spaces. For example, the courtyard typology, while climatically and socially effective in the past, may be unsuitable in dense urban contexts where land is limited, and privacy expectations have changed.

Nikezić Ana *et al.*, (2021) [21] address this in their work on future housing identities in Serbia. They argue that architectural responses must be flexible, adaptive, and deeply attuned to evolving

urban lifestyles, rather than rigidly following traditional models. In Ecuador, Zambrano *et al.*, (2023) [25] describe how the “three-space house” common in rural areas must be reimaged to accommodate modern infrastructure and aspirations, without losing its cultural significance.

In Turkey, Sak Acur and Mine [8] documents how even supposedly modernist housing retained traditional spatial logic suggesting that adaptation is possible but complex. Meanwhile, Kamali and Shiva [15] notes that many Iranian architects struggle to reconcile traditional spatial arrangements (like extended family living or hierarchical gendered spaces) with the functional and regulatory requirements of modern urban life. Wu *et al.*, (2024) [23] extend this discussion to the agricultural landscape, where traditional eco-agricultural practices must evolve to support both ecological resilience and modern economic viability.

In Malaysia, this challenge is particularly pronounced in rapidly growing urban centers like Kuala Lumpur and Penang. Traditional Malay houses, with their open-plan courtyards and large communal spaces, were designed for extended families in rural settings, but this spatial logic often conflicts with the modern nuclear family structure that dominates urban life. As urban density increases and land becomes more expensive, the desire for private, compartmentalized spaces common in Western-style apartments becomes more pronounced, making the adaptation of traditional forms difficult. Furthermore, expectations of privacy in Malaysian homes have shifted, with smaller, more enclosed living units becoming the norm, especially in high-rise developments.

While many architects attempt to adapt traditional forms like the raised house to urban contexts, these solutions often overlook the subtle cultural practices and spatial dynamics that once governed them. For example, in the traditional Malay raised house, the raised structure and open underfloor spaces served not only to combat the humid tropical climate but also to facilitate social interaction and flexibility of use. However, in modern urban settings, the incorporation of such features is often viewed as impractical, with developers favoring standard, space-efficient designs to maximize profit.

This mismatch between traditional design principles and contemporary lifestyles highlights a deeper tension: the rapid urbanization and transformation of social norms in Malaysia. As nuclear families become more dominant, many of the social functions embedded in traditional architecture such as extended family living, communal dining, and shared domestic chores are no longer central to daily life. Consequently, traditional spatial typologies are often abandoned in favor of more modern, individualized living arrangements. However, some urban planners and architects are exploring hybrid solutions that seek to balance traditional wisdom with contemporary needs, particularly in mixed-use developments that prioritize community interaction and sustainable living.

In many parts of Malaysia, especially in new towns or suburban developments, there is still potential to adapt traditional principles. However, this requires an awareness of local climate conditions, social values, and the evolving needs of communities, which are often overlooked in favor of uniform, mass-produced housing solutions.

3.5 Institutional, Social, and Political Barriers

Even when there is a desire to adapt traditional values, structural and institutional barriers often hinder meaningful implementation. These include restrictive building codes, limited funding for heritage preservation, weak public awareness, and the political manipulation of tradition. In Malaysia, while there is growing interest in preserving traditional Malay architectural elements, the absence of clear regulations to safeguard these practices in urban development often leads to the prioritization of cost-effective, standardized designs. The lack of integration of vernacular values in urban planning is further exacerbated by limited government investment in preserving cultural landscapes in the face of rapid modernization.

In the UAE, Hobbs and Joseph J [12] notes that while there is public nostalgia for traditional urbanism, government-led development prioritizes global investment, with little regulatory action to protect cultural landscapes. Similarly, in Malaysia, large-scale developments such as the Tun Razak Exchange and Forest City have drawn criticism for their lack of cultural sensitivity, with traditional forms being overshadowed by global architectural trends driven by economic imperatives rather than cultural relevance.

In China, rural revitalization policies are emerging, but the loss of traditional knowledge from past modernization efforts presents a significant obstacle. Wu *et al.*, (2024) [23] argue that restoring cultural and ecological knowledge is essential for genuine revitalization, which in Malaysia is equally vital given the country's rural-urban divide. The challenge lies in engaging local communities to share their knowledge, which has often been sidelined in favor of more standardized, urban-driven approaches to housing and development.

In Iran, Kamelnia *et al.*, (2022) [16] highlight that "community architecture" often fails to engage locals in meaningful ways, serving more as a political tool than a participatory process. This is mirrored in Malaysia, where state-led projects such as low-cost housing schemes often fail to address the social and cultural needs of the communities they serve, leading to alienation rather than integration of local values.

Ristić Trajković *et al.*, (2021) [26] emphasize that policies often focus on the physical and aesthetic aspects of heritage, neglecting the socio-cultural and behavioral dimensions that give architecture its true meaning. In Malaysia, this approach is prevalent, with heritage policies often focusing on preserving iconic buildings rather than fostering deeper cultural integration through community engagement, education, and policy that prioritize social coherence alongside aesthetics. A summary of the five main thematic challenges, along with their associated countries and supporting references, is presented in Table 3 below.

Table 3

Five key challenges in adapting traditional architecture to modern design

Theme	Country / Region	Summary of Challenge	Reference
1. Loss of Cultural Identity and Meaning	Egypt, Iran, Saudi Arabia, UAE, Serbia, Turkey	Modernism often strips away symbolic and cultural meanings, replacing them with abstract forms disconnected from local identity.	<ul style="list-style-type: none"> • Gaber <i>et al.</i>, (2023) [9] • Kamali and Shiva (2024) [15] • Moscatelli and Monica (2023) [18] • Hobbs and Joseph J (2017) [12] • Ristić Trajković <i>et al.</i>, (2021) [26]
	Ecuador, Malaysia	Cultural identity is further challenged by the lack of heritage protection or deep understanding of traditional values.	<ul style="list-style-type: none"> • Sak Acur and Mine (2024) [8] • Zambrano <i>et al.</i>, (2023) [25] • Ismail (2022) [13]
2. Conflict Between Traditional Values and Technological Progress	Iraq, China, Iran, UAE, Saudi Arabia	Traditional construction and design are not easily compatible with industrialized methods or modern performance standards.	<ul style="list-style-type: none"> • Alqalami (2020) [3] • Wu <i>et al.</i>, (2024) [23] • Kamali (2024) [15] • Hobbs and Joseph J (2017) [12] • Moscatelli and Monica (2023) [18]

	Serbia	Technological goals often overshadow behavioral and cultural values in heritage reuse.	<ul style="list-style-type: none"> • Ristić Trajković <i>et al.</i>, (2021) [26]
3. Adaptation Without Appropriation or Superficial Imitation	Iran, Saudi Arabia, Serbia, China	Designers often mimic surface aesthetics without understanding the deeper social or cultural logic.	<ul style="list-style-type: none"> • Farjami <i>et al.</i>, (2020) [7] • Moscatelli and Monica (2023) [18] • Ristić Trajković <i>et al.</i>, (2021) [26] • Wu <i>et al.</i>, (2024) [23]
	Iran, Turkey	Architects are aware of the challenge but struggle to meaningfully balance novelty with tradition.	<ul style="list-style-type: none"> • Kamali (2024) [15] • Sak Acur and Mine (2024) [8]
4. Incompatibility with Contemporary Needs and Lifestyles	Ecuador, Iran, Turkey, Serbia	Traditional spatial logic (courtyards, introversion) often conflicts with urban density, privacy norms, or digital lifestyles.	<ul style="list-style-type: none"> • Zambrano <i>et al.</i>, (2023) [25] • Kamali (2024) [15] • Sak Acur and Mine (2024) [8] • Nikezić <i>et al.</i>, (2021)
	China	Traditional agricultural patterns are mismatched with modern economic and ecological demands.	<ul style="list-style-type: none"> • Wu <i>et al.</i>, (2024) [23]
5. Institutional, Social, and Political Barriers	UAE, Iran, China, Ecuador, Saudi Arabia	Political agendas, rapid urbanization, weak regulations, or lack of recognition hinder effective integration of tradition.	<ul style="list-style-type: none"> • Hobbs and Joseph J (2017) [12] • Kamelnia <i>et al.</i>, (2022) [16] • Wu <i>et al.</i>, (2024) [23] • Zambrano <i>et al.</i>, (2023) [25] • Moscatelli and Monica (2023) [18]
	Iran, Serbia	Community participation is often symbolic or superficial; modernist heritage lacks a human-centered approach.	<ul style="list-style-type: none"> • Kamali (2024) [15] • Ristić Trajković <i>et al.</i>, (2021) [26]

4. Discussion

The adaptation of traditional and vernacular architectural values to contemporary design contexts remains a deeply complex and multilayered challenge. Through an in-depth thematic analysis of international case studies and scholarly works, this paper has identified five recurring challenges as shown in Figure 2 below:

- i. The loss of cultural identity and meaning.
- ii. Conflict between traditional values and technological progress.
- iii. Superficial adaptation and imitation of traditional forms
- iv. Incompatibility of traditional architecture with contemporary needs and lifestyles.
- v. Institutional, social, and political barriers to meaningful integration.

Each of these challenges transcends regional boundaries, illustrating the global struggle to reconcile cultural heritage with modernity in architectural practice. From the Gulf States to China, Serbia, Iran, and Latin America, there is a consistent tension between preserving the spatial and symbolic essence of tradition while responding to the functional, aesthetic, and economic demands of the present. While the motivations, responses, and outcomes may differ across contexts, the underlying problem is universal, contemporary architecture often privileges efficiency, visual novelty, and global aesthetics over cultural specificity and historical continuity.

One of the most profound findings concerns the erosion of cultural identity in rapidly urbanizing societies. As seen in the UAE [12], Egypt [9], and Saudi Arabia [18], modern architectural developments frequently disregard indigenous spatial languages and symbolisms, resulting in a sense of alienation among communities. This phenomenon is not only visual but also socio-cultural, as architecture ceases to reflect communal memory, values, or way of life.

Moreover, the technological imperative in modern architecture continues to marginalize traditional building knowledge. As highlighted in Iraq, China, and Iran, traditional systems while climatically effective and culturally resonant are often deemed incompatible with contemporary standards of performance and scalability [3,23]. This raises fundamental questions about the role of innovation: Should it replace tradition entirely, or reinterpret it in meaningful ways? A particularly troubling challenge is the superficial appropriation of tradition in modern design. In many contexts, architects reproduce vernacular forms or materials purely for aesthetic effect, without understanding or respecting the deeper cultural logic they represent [7,26]. This form of cultural mimicry undermines authenticity and often reinforces stereotypes rather than fostering cultural continuity.

Equally significant is the difficulty of aligning traditional spatial forms with modern lifestyles. Urban density, nuclear family structures, digital life, and shifting gender roles all complicate the applicability of traditional layouts like courtyards or communal clusters. As shown in Serbia, Ecuador, and Turkey, architects are now exploring hybrid models that can mediate between past and present, but these efforts remain context-sensitive and often experimental.

Finally, the analysis underscores the critical impact of institutional, political, and policy-level constraints. In many countries, vernacular heritage is either unrecognized by official frameworks or used as a political symbol rather than a living resource for sustainable design [16,23]. Without systemic support, including funding, legal protection, and community participation, efforts to adapt tradition remain fragmented and inconsistent.

The global nature of these challenges has significant implications for contemporary architectural discourse. As cities across Asia, the Middle East, and the Global South urbanize at unprecedented rates, the choices architects and planners make today will shape not only skylines but also cultural identities and intergenerational legacies. The erosion of place identity and the dominance of homogenized urban forms threaten to produce a world of “nowhere places” urban environments that are interchangeable, soulless, and socially disengaged. Moreover, the international architectural community must reckon with the ethical and epistemological consequences of privileging Western modernist paradigms in diverse cultural contexts. There is an urgent need to shift from viewing tradition as a nostalgic relic or a visual motif, to understanding it as a knowledge system rich with ecological, spatial, and social intelligence that remains highly relevant for contemporary design challenges, including sustainability, resilience, and community well-being.

The findings of this study are highly relevant to the Malaysian context, where the built environment is increasingly shaped by global architectural trends, high-density development, and market-driven design. As highlighted by Ismail *et al.*, (2022) [14], many contemporary Malaysian buildings lack a connection to local cultural values, leading to a weakened sense of national identity in the urban landscape. Malaysia’s diverse heritage including traditional Malay house, colonial

influences, and multi-ethnic spatial traditions offers a rich repository of forms, values, and practices. Yet, these are often marginalized in favor of imported typologies that do not respond to local climate, culture, or social dynamics.

The challenges outlined in this paper resonate strongly with current architectural practices in Malaysia. For instance, the superficial appropriation of traditional elements such as mimicking rooflines or decorative motifs without integrating spatial logic or community-oriented layouts is a common occurrence. Additionally, the gap between traditional practices and technological innovation is evident in the limited use of passive design strategies despite their proven effectiveness in the tropical climate. Moreover, institutional barriers such as rigid development regulations and lack of support for vernacular research and education continue to hinder deeper engagement with Malaysia's architectural heritage.

Malaysia stands at a critical crossroads: either continue a trajectory of homogenization, or embrace a more reflective and transformative approach to tradition in architecture. The lessons from other regions provide both cautionary tales and hopeful models, underscoring the need for Malaysia to invest in policies, education, and design practices that respect, reinterpret, and revitalize its diverse architectural traditions in meaningful ways.

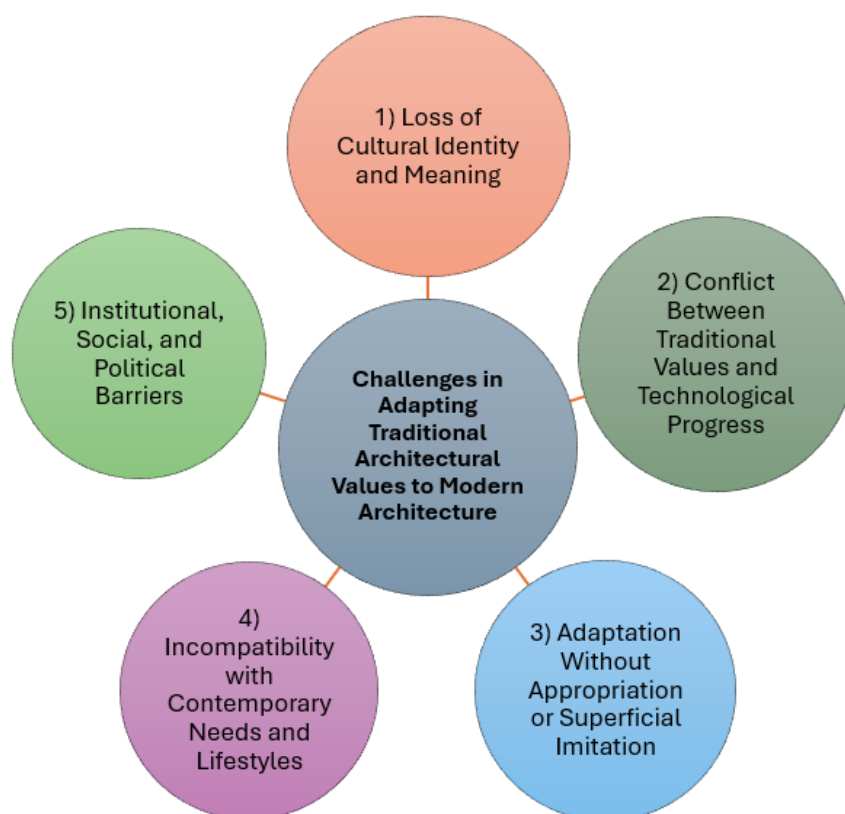


Fig. 2. Summary findings of five main challenges or themes of the study

5. Conclusion

This study identifies five interrelated challenges in adapting traditional architectural values to modern contexts: loss of cultural identity and meaning, conflict between traditional values and technological progress, adaptation without appropriation or superficial imitation, incompatibility with contemporary needs and lifestyles, and institutional, social, and political barriers. These issues

often overlap technological and regulatory constraints contribute to design superficiality, while both weaken cultural continuity.

A notable trend is the renewed interest in vernacular principles driven by sustainability goals. Case studies from China, Iran, Ecuador, and Malaysia illustrate efforts to merge ecological, cultural, and social values. Yet, gaps persist particularly the underrepresentation of Southeast Asian contexts like Malaysia, and an overemphasis on form over function and meaning in much of the literature.

The implications are clear, architects must go beyond visual references to engage with the essence of tradition educators should promote culturally grounded, sustainable design thinking and policymakers must create frameworks that support heritage integration in practice.

In Malaysia, where rich architectural traditions face growing homogenization, these insights are especially urgent. The future of architecture lies not in choosing between tradition and modernity, but in intelligently weaving them together to shape culturally meaningful, resilient spaces.

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