

THE INFLUENCE OF CULTURE INTO ARCHITECTURAL FACADE FOR CULTURAL AND ART CENTRE IN KELANTAN

**Nurul Syaheera Aziz^{1*}, Nur Murni Ameliana Lelasari²,
Suhailah M Mohd Siraj³, Muhamad Hanafi Rahmat⁴
& Alice Sabrina Ismail⁵
*Corresponding Author**

^{1,2,3,4}Department of Architecture, Faculty of Civil Engineering and Built
Environment, 86400 Parit Raja, Batu Pahat, Johor, MALAYSIA

⁵Program Architecture, Faculty of Built Environment and Surveying,
Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor, MALAYSIA

syaheera@uthm.edu.my¹, suhailams@uthm.edu.my³, b-alice@utm.my⁵,
af210032@student.uthm.edu.my

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ABSTRACT

This study focuses on how culture affects a proposed cultural and arts center in Kelantan, and its architectural facade. This research aims to identify specific cultural elements that impact local design, focusing on traditional architectural forms, materials, and motifs. It provides a comprehensive understanding of how local culture influences a building's appearance and functionality by documenting these effects. The research went on to examine the benefits of applying culturally informed design in tropical climates, emphasising improvements in ventilation, thermal comfort, and weather protection. In the end, this research uses this understanding to ensure that the facade of the Culture and Art Centre embraces Kelantan's cultural legacy while also fulfilling functional requirements. The results seek to further the conversation on culturally responsive architecture by providing a template for incorporating traditional components into modern buildings while maintaining and promoting regional identity. Other than that, a lot lack awareness of or value the significance of protecting Kelantan's architectural legacy. The younger generation may be unaware of how crucial traditional facades are to the region's history, culture, and identity.



Keywords: *Kelantan, Culture heritage, Facade architecture*

INTRODUCTION

A Cultural and Art Centre in Malaysia serves as a multifunctional institution that plays a pivotal role in promoting arts, culture, and heritage within the country. The Ministry of Tourism, Arts and Culture Malaysia envisions developing Malaysia as a world-class tourist and cultural destination by emphasizing arts, culture, and heritage to build a national identity (Hussin, 2018). These centers are essential for providing access to culture, offering various cultural services, promoting citizen participation in cultural activities, and providing lifelong learning opportunities (Pfeifere, 2022). They serve as venues for the creation of art, the promotion of intergenerational learning, and the validation of cultural practices by community members (Lindeman et al., 2017).

Situated in the northeaster region of Peninsular Malaysia, Kelantan entices with its abundant cultural and historical legacy. This unique state in Malaysia is a testament to the vibrant legacy and lasting legacy of its people. The history of Kelantan is a patchwork of diverse threads, influenced by Islamic, Malay, and Thai cultures, all of which have contributed to the distinctive character of the province. Within this framework, Kelantan's architectural designs materialise as a physical embodiment of its past, reflecting the principles, beliefs, and aspirations of the city's citizens for countless generations to come.

When designing a Cultural and Art Centre in Malaysia, cultural influences play a significant role in shaping the architectural and design elements of the center. The design of such centers often reflects a blend of various cultural influences that are deeply rooted in Malaysia heritage. For instance, traditional Malay houses in Negeri Sembilan showcase how cultural influences impact design and construction, highlighting the importance of social values and cultural impact on architectural elements (Azman et al. 2022).

Analyzing Kelantanese architecture offers a window into the state's soul and a thorough comprehension of its social framework. These architectural

marvels are not simply buildings; they are tales of resilience, adaptability, and invention. They stand for the shifts in history, from the simple homes of rural villages to the opulence of imperial palaces and mosques. Embracing the ethos of a town profoundly rooted in its history, every building reveals secrets of workmanship passed down through decades.

Furthermore, exploring Kelantanese architecture is important even if it isn't visually appealing. It provides a prism through which to see the manner of life, social structure, and cultural customs of the Kelantanese people, acting as a mirror reflecting their values and goals. Through an examination of Kelantan's architectural legacy, researchers and amateurs alike set out on a voyage of exploration, revealing the many facets of customs, identity, and culture that make up this fascinating state.

One potential approach to enhancing Kelantan's architectural facades could involve incorporating bio inspired ventilation systems, such as the Mimosa Kinetic Façade, which leverages natural mechanisms to improve indoor air quality Sankaewthong (2023). By integrating such innovative solutions, Kelantan's buildings can achieve better environmental performance while maintaining a connection to nature, a key aspect of the region's cultural identity. It presents several significant difficulties in studying Kelantan's architectural facade, especially in its southern portion. The cultural history of the area is being undermined by the demolition of numerous old buildings with distinctive facades and their replacement with generic ones. The neglect and degradation of historic buildings are facilitated by this ignorance. The difficulty also involves striking a balance between modernization and adaptation, which have a big impact, and upkeep. While maintaining the traditional facade, it also needs to be improved to meet contemporary practical needs. Finding sustainable ways to integrate contemporary facilities and technologies into historic structures while maintaining their architectural integrity remains a pressing challenge for Kelantan's urban development.

The study aims to explore the influence of culture on architectural facades for a Cultural and Art Centre in Pasir Mas, Kelantan. The first objective is to identify the cultural elements that shape facade design in Kelantan, focusing on traditional motifs, materials, and architectural styles unique to the region. This involves documenting various cultural influences

that contribute to the aesthetic and functional aspects of local architecture. Next, it's important to analyze the benefits of incorporating culturally influenced architectural designs in a tropical climate. This analysis will consider how these designs enhance thermal comfort, improve ventilation, and provide protection from harsh weather conditions, making buildings more sustainable and comfortable for occupants. Finally, the study aims to apply these culturally influenced designs to the facade of the Cultural and Art Centre. This integration ensures that the building not only serves its functional purpose but also reflects and preserves the local cultural heritage. By achieving these objectives, the study seeks to create a design that is both environmentally responsive and culturally resonant, contributing to the architectural identity of Pasir Mas while addressing the practical needs of a tropical climate.

LITERATURE REVIEW

The literature on Kelantan's architectural facades provides an in-depth study of the built environment of the area, taking into account its cultural, historical, and architectural aspects. Research on traditional Malay houses, like that done by Abdul Halim Abdul Majid et al., sheds light on Kelantan's rich architectural history and explains the elaborate design features and cultural value ingrained in these buildings.

Additionally, studies on the impact of Islamic architecture in Malaysia, such as those by Wan Zurina Wan Jaafar et al., highlight how Islamic design motifs and principles have influenced Kelantan's architectural facades, which are a reflection of the region's cultural and religious identity. With academics like Abdul Aziz Abdul Samad et al. and Siti Norlizaiha Harun et al. emphasizing the difficulties and solutions associated with preserving Kelantan's architectural legacy in the face of population and development pressures, conservation and preservation became a crucial issue.

Furthermore, as showed by the research conducted by Mohamad Dzulkarnaen Sudirman et al. and Che Zalina Zulkifli et al., talks about urban transformation and heritage conservation also throw light on the dynamics that are changing the architectural landscape of Kelantan and offer important insights into the region's past, present, and future architectural narratives.

The northeastern Malaysian city of Kelantan is proud of its rich cultural legacy, which is mirrored in its traditional architectural designs. A notable architectural style that is popular in Kelantan is the traditional Malay housing distinguished by its raised platform plan known as "rumah tiang 12." The most distinguishing element of the house is the housing that supports the structure and high design for ventilation and can prevent flooding. The 12 Pillar Houses have intricate wood carvings and a steep roof structure for efficient water flow. Traditional Malay architecture uses wood and the use of large windows for ventilation, as well as passive cooling techniques because they are practical and adaptable to the climate.

Furthermore, mosques that integrate Islamic and Malay architectural elements are another reason Kelantan is well-known. A famous instance is the Muhammadi Mosque, which is well-known for its magnificence and elaborate Islamic geometric designs that decorate its minarets and domes. Mosques with intricate wooden carvings, colorful exteriors, and tiered roofing are typical of Kelantanese architecture, and they all work together to produce a visually appealing environment that is consistent with the cultural and spiritual significance of these structures. These architectural elements reflect Kelantan's rich cultural past in addition to being useful elements. The annual cultural events held in Kelantan, particularly the well-known Kelantan Traditional Cultural Festival (Pesta Kelantan), are another reason for the city's fame. This festival, which includes exhibitions, concerts, and customary competitions, serves as a showcase for the state's rich cultural legacy. These gatherings provide a platform for regional performers, artists, and artisans to display their skills, bringing in tourists and visitors from outside the region and fostering the socioeconomic growth of the community. Fundamentally, Kelantan's cultural significance goes beyond its material legacy to include intangible components that are ingrained in the daily lives of its people and foster a strong feeling of identity and community. (Kanit Sripaoraya, 2022)

Traditional Malay architecture blends with modern design techniques to create a rich tapestry of influences on architectural facades. Rich details, bright colors, and a significant focus on cultural identity and historical preservation are characteristics of the Kelantan architectural facade. According to historical research, colonial, Islamic, and Malay architectural traditions have all had an impact on the development of Kelantan's

architectural style over the years. The "Kampung Houses," which are multi-story timber buildings with elaborately carved façade and steep pitched roofs, are an example of traditional Malay houses. The craftsmanship, cultural values, and tropical environment of the area may all be seen in these architectural aspects. Research conducted in the present focuses on how modern facade design combines classic architectural elements and materials.

As a whole, the literature describes how Kelantan architectural facades dynamically blend innovation with tradition, demonstrating both a forward-thinking attitude to design and a profound understanding of legacy. The effects of architectural facade interventions on the sociocultural, environmental, and economic aspects of Kelantan's expanding urban landscape require additional research.

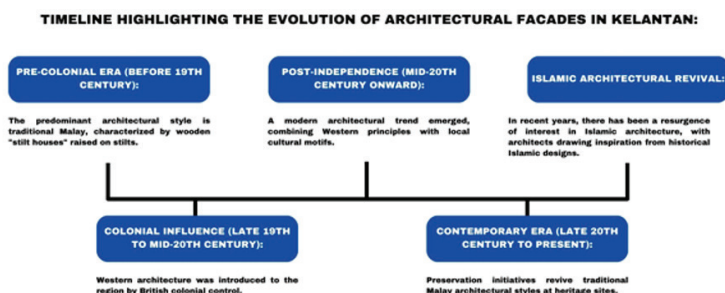


Figure 1. Timeline of Architecture Facades in Kelantan

Source: Author, 2025

The architectural facades of Kelantan have changed over the ages by including elements of Chinese, Indian, Malay, and Islamic design. Traditional Malay architecture, which consists of large timber buildings embellished with elaborate carvings and designs, was adopted in pre-colonial periods. However, Western architectural influences started influencing government structures and institutions with the advent of British colonial control in the late 19th century. These characteristics took the form of symmetrical patterns and grand entrances symbolic of Victorian and Neoclassical styles. Nonetheless, residential and religious structures still feature traditional Malay architectural elements.

Urbanisation forced a transition in the preferred construction materials from brick and concrete to concrete, and after independence in the mid-20th century, a modern architectural trend evolved that combined Western ideas

with local cultural influences. During this time, the building's facade had an elegant combination of modern design elements with Islamic calligraphy and themes. Combined with more general architectural trends that emphasised sustainability and cultural authenticity, a renewed interest in conserving ancient Malay architectural styles arose as Kelantan advanced into the modern period, especially at heritage sites. The architectural environment of Kelantan has been further enhanced by the recent rebirth of Islamic architecture. Mosques and other Islamic establishments feature elaborate geometric designs, arabesques, and classical calligraphy, all of which have symbolic meanings for both spiritual and cultural value. Throughout this time, Kelantan's architectural facade has evolved dynamically, reflecting the interaction of political, cultural, and economic factors while preserving its own regional identity.



Figure 2. Ventilation Hole Panels with Floral Motifs of Lotus Flower and Winged Leaf Plants

Source: <https://scialert.net/fulltext/?doi=jest.2014.236.244>

The ventilation hole at Mohamad Dobah's home has this carving motif, which is oriented horizontally in accordance with the design of the ornamented widow's wall. This carving has a round silat stem and is piercing in style. Other plant themes, such as the Winged Leaf motif with its tendrils, exquisitely coiled stems, branches, and buds, surround this Lotus Flower motif. As per Norhaiza, the kind of carvings that employ these themes symbolise the cessation of development in the movement of life within the plant kingdom.



Figure 3. The use of Flora Motifs in Dumlplings

Source: <https://scialert.net/fulltext/?doi=jest.2014.236.244>

Additionally, as illustrated in figure 2, a floral theme has been incorporated into the dumlplings at Rumah Mohamad Dobah. This round grave carving on a silat trunk features a sunflower and winged leaf design. The significance of this dumlpling refers to a diamond or rhombus shape, according to material on the website. Often used as a synonym for a rhombus with an angle of 45 degrees, the meaning is not entirely apparent. One frequently sees it used for carving. Additionally, the shape resembles the geometry that encircles the floral theme.

RESEARCH METHODOLOGY

The architectural legacy of Kelantan is essential to preserving the region's cultural identity, and its significance extends beyond its aesthetic value. By caring for their architectural treasures, the inhabitants of Kelantan also protect their traditions for arriving generations. This research delves into Kelantan's architectural history, examining the range of architectural types, cultural significance, preservation efforts, and community engagement. Our goal is to explicate the significance of this architectural marvel for the preservation of Kelantan's distinct cultural character, as well as to unveil its deeper meaning through meticulous analysis and interpretation. (Mohammad Rusdi, 2011).

Rumah Tiang Dua Belas

Malay architecture facades in Kelantan are adorned with exquisite floral designs that are a reflection of the region's lush natural surroundings

and the significance of plant culture in Malay tradition. These designs, referred to as "flora carvings," are expertly carved into wooden panels or included as ornamental components on structures, especially Malay palaces and traditional homes.



Figure 4. Rumah Tiang Dua Belas at Kelantan, Detail of Flora Motif Engraving on Wood

Source: <https://www.bernama.com/en/news.php?id=2076871>

The carved floral designs typically feature a variety of locally native plant species, including cambogia (Bunga Kamboja), jasmine (Melur), and hibiscus (Bunga Raya). With fine carvings and flowing curves, these floral designs are created with great attention to detail, perfectly expressing the beauty and grace of each flower.

Moreover, the patterns utilised include leaf themes, which represent development, wealth, and harmony with nature. Leaves, vines, and branches are examples of these motifs that are frequently seen on Malay architectural facades in Kelantan. These motifs are frequently mixed and matched with floral patterns to form elaborate compositions that adorn building exteriors, bringing life and natural beauty to the architectural environment.

In general, the floral motifs carved into Kelantan Malay architecture represent culture, reverence for the environment, and an appreciation for handicrafts that have been passed down through the generations. They also serve as an expression of identity on the facade of some buildings. (Azreena, 2013) (Nursuriani, 2013).

Masjid Muhammadi

One of the mosques in Kota Bharu, Kelantan, that features calligraphy in its Islamic architecture is the Muhammadi Mosque. Based of the Islamic

calligraphy that resulted, Malay sculptors were able to utilise blacksmiths' skills to successfully forge verses from the Holy Quran into the surface of keris, kelewang, parang, and starfish sheaths and blades. The surface of the weapon is enhanced aesthetically by the addition of ornamental plants that are merged in with the motifs of the Quranic passages.



Figure 5. Masjid Muhammadi Kota Bahru, Kelantan






Source: Author, 2025


Rather than simply expressing space through ornamental themes, the early Islamic art tradition focused more on communicating ideas and philosophies grounded in the concept of monotheism. It is not unjustified to be sensitive to this idea, but Islamic artists are conscious of the aesthetic value of some aspects of the emission of religious insight. The hadith mentions restriction; an alternative is the appearance of geometric shapes, botanical themes, and calligraphy. Many interpretations have therefore been offered in response to the hadith; however, Islamic artists view decorative motifs as a natural development and source of creativity, and even this motivation incorporates principles drawn from Islamic and religious sources. (Nur Najwa Hanim,2021).

RESULTS AND FINDINGS

Table 1. Characteristics of Façade between Rumah Tiang Dua Belas and Muhammadi Mosque

Characteristics of facade	Rumah Tiang Dua Belas	Muhammadi Mosque
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Architectural Style	<p>Malay Architectural Influence</p>  <p>Figure 6. Rumah Tiang Dua Belas 1880</p>  <p>Figure 7. Rumah Tiang Dua Belas 2024</p>	<p>This mosque creates a unique combination by integrating native Malay influences with Islamic architectural components.</p>  <p>Figure 8. Masjid Muhammadi Kota Bahru 1907</p>  <p>Figure 9. Masjid Muhammadi Kota Bahru 2024</p>
Structural Design	<p>This traditional Malay house, named for its twelve pillars, is elevated to enhance ventilation and avoid flooding.</p>	<p>A combination of Islamic and traditional Malay architectural features that honor its significance in both culture and religion.</p>
Ornamentation	<p>Primarily built from wood, it is a prime example of utilizing regional resources and traditional carpentry methods.</p>	<p>Islamic calligraphy and geometric designs are widely used, reflecting the Islamic world's creative legacy and religious significance.</p>
Material Use	<p>The facade is embellished with intricate wood carvings and lattice structure, which showcase the traditional Malay workmanship and aesthetic principles.</p>	<p>As Rumah Tiang Dua Belas, it is mostly made of wood, but with more recent renovations, it also uses brick and concrete.</p>
Ventilation Features	<p>The house's open rooms below ground level and large shuttered windows improve ventilation, which keeps the interior cool.</p>	<p>Natural ventilation is made possible by large, arched windows and open courtyards, which improve both the physical and spiritual environments.</p>
Roof Design	<p>In order to provide effective water runoff which is essential in the tropical climate the roof is steep and gabled. It frequently features ornamental gable ends.</p>	 <p>Figure 10. Dome Masjid Muhammadi (Mizah Mardhiah)</p>

		<p>Dome: The primary feature of Islamic architecture is the dome, which provides an interior that is spacious and represents the sky. It is frequently ornamented with geometric Islamic designs.</p>  <p>Figure 11. Timeline of architecture facades in Kelantan.</p> <p>Minaret: This mosque features one or more towers, as well as tall structures like the tower from which the call to prayer is broadcast. The minaret symbolizes the presence of Islam and serves a practical purpose.</p>
Cultural Significance	With a focus on community areas and environmental harmony, the layout and design are in line with Malay cultural and social norms.	<p>1.Religious Significance: The mosque serves as a hub for spiritual activities, promoting religious education and practices.</p> <p>2.Architectural Heritage: The design and construction of Masjid Muhammadi highlight the use of traditional Malay and Islamic architectural elements.</p>

Source: Author, 2025

The facade of Rumah Tiang Dua Belas (a traditional Malay stage house) and Masjid Muhammadi (Masjid Muhammadi) in Kelantan, with their disparate architectural styles, provide an intriguing window into the region's architectural history and cultural identity.

The outside of Rumah Tiang Dua Belas is an example of traditional Malay architecture that considers the surrounding area. With its raised columns, intricate wood carvings, and steep pitched roof, this house is a masterpiece of craftsmanship and attention to detail. When examined more closely, Rumah Tiang Dua Belas 's exterior reveals a subtle blend of design and utility, with features meant to reduce the risk of flooding, promote

natural ventilation, and provide shade from the tropical sun. The floral and geometric patterns found on facade ornamentation represent social position, religious convictions, and cultural values. (Azli Abdullah, 2021).

On the other hand, the Muhammadi Mosque's facade represents the influence of Islamic architecture and acts as a centre for social and spiritual gatherings. The mosque's facade is characterized by elegant arches, domes, and minarets, all of which are examples of traditional Islamic architecture. The Muhammadi Mosque's exterior is covered in intricate lettering and geometric designs that lend the building a feeling of grandeur and harmony. The mosque's architectural features, such as the qibla wall facing Mecca and the mihrab niche that denotes the direction of prayer, contribute to its function as a place of worship and spiritual reflection.

In summary, the evaluation of Rumah Tiang Dua Belas 's façade and the Muhammadi Mosque's facade analysis underscores the wide range of architectural legacy in Kelantan and the variety of factors that influence the region's constructed landscape. Through the examination of these architectural icons, scholars are able to get important knowledge about the environment, culture, and religion that influence Kelantan's architectural design and building methods. (Azli Abdullah, 2021).

DISCUSSION

Table 2. Differences between Rumah Tiang Dua Belas and Masjid Muhammadi

Differences	Rumah Tiang Dua Belas	Muhammadi Mosque
Purpose and Function	Primarily a residential structure	A religious building used for worship and community gatherings
Architectural Style	Traditional Malay house with features like twelve pillars and raised structed.	Combine Islamic architectural elements with local Malay influences, featuring domes and minarets.
Structural Design	Elevated to prevent flooding and enhance ventilation.	Built on a solid foundation with a large prayer hall and courtyard.
Materials Used	Primarily uses timber and other natural materials.	Uses a combination of timber,concrete and brick.

Ornamentation	Features intricate wood carvings and latticework.	Includes Islamic geometric patterns, calligraphy and detailed tile work.
Roof Design	Features steep, gabled roofs to facilitate rainwater runoff and maintain the house's structural integrity in a tropical climate.	Often includes domes and flat or gently sloping roofs, with domes symbolizing the heavens and adding to the architectural grandeur.
Scale and Proportion	Generally smaller and more human-scaled, designed to accommodate families.	Larger and designed to accommodate large numbers of worshippers, often including expansive interior and exterior spaces.

Source: Author, 2025

Table 3. Similarities Between Rumah Tiang Dua Belas and Muhammadi Mosque

Similarities	Rumah Tiang Dua Belas	Muhammadi Mosque
Culture Significance	Both structures reflect the cultural heritage and craftsmanship of Kelantan.	
Uses of Traditional Materials	Both incorporate timber and other traditional materials in their construction.	
Ventilation	Both designs emphasize natural ventilation suitable for the tropical climate of Kelantan.	
Decorative Elements	Both feature intricate and elaborate decorative elements that reflect the local artistic traditions.	
Community Role	Both serve as important community structures, with Rumah Tiang Dua Belas as home and Masjid Muhammadi as a place of worship and social gatherings.	

Source: Author, 2025

In terms of cultural preservation and multifunctional benefits, there are various advantages to incorporating design features from the Muhammadi Mosque and Rumah Tiang Dua Belas facades into a modern construction proposal. As discussed in case studies and associated articles, Kelantan's cultural history is respected and celebrated through the usage of Islamic architecture and traditional Malay theatre house design components in cultural preservation. By incorporating these themes and design elements into contemporary structures, the architects honor the area's rich past and distinctive character, promoting a feeling of community and pride.

The elaborate patterns, beautiful arches, and elaborate carvings on the Muhammadi Mosque's and Rumah Tiang Dua Belas's façade, in addition to their aesthetic value, provide the architectural composition depth and visual interest. Their use of historical design features in modern structures not only improves aesthetics but also strengthens a feeling of authenticity and regional identity. (Azli Abdullah, 2021)

Therefore, I suggest that in an adaptive reuse proposal, traditional design elements from the Muhammadi Mosque and Rumah Tiang Dua Belas facade should be modified. Historic structures can be given new life while maintaining its cultural relevance by refurbishment using architectural motifs and techniques derived from these iconic buildings.

In conclusion, combining elements of the Muhammadi Mosque and the facade of Rumah Tiang Dua Belas into a contemporary building project provides a thorough approach to architectural design that strikes a balance between aesthetic appeal, environmental sustainability, and cultural preservation. By following this outdated practice, architects can create buildings that enhance the built environment with character and history in addition to being functional.

CONCLUSION

Researching Kelantan's facade reveals a richly layered background that is heavily influenced by Islamic and Malay architecture. Travelling through the southern part of Kelantan seems to be travelling back in time, as evidenced by the elaborate patterns and buildings that act as quiet reminders of centuries of cultural development. In order, to address these problems and preserve Kelantan's architectural legacy for future generations, government organisations, local communities, architects, and heritage conservationists must work together to create awareness, enforce laws, and put creative preservation plans into action.

The harmonious combination of Islamic and Malay architectural features is the central theme of this architectural narrative. The historical story of Kelantan, where Islam not only pervades religious practices but also leaves an enduring influence on its architectural environment, is reflected

in this synthesis of two distinct yet harmonious styles. Every building in the mosque communicates a tale of faith, culture, and identity, from the elaborate designs adorning the wooden construction to the magnificent dome that tops the building.

On the other hand, Kelantan is an outstanding example of Islamic architecture. Essentially, Kelantan's architectural facade is a living testament to its Malay and Islamic traditions rather than just a collection of structures. It is evidence of how resilient culture can be when faced with modernity and still flourish. As tourists marvel at this architectural marvel, they are reminded of the rich historical tapestry that continues to influence Kelantan's identity. Indeed, one can see both a glimpse of the past and a glimmer of optimism for the future in the winding pathways and rising towers of Kelantan architecture, where tradition and modernity coexist peacefully.

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All authors contributed to the design of the research, the questionnaire, and the write-up. Universiti Tun Hussein Onn Malaysia undertook the online survey, data cleaning and tabulation. All authors have read and approved the final manuscript.

CONFLICT OF INTEREST

The authors declared to have no conflict of interest.

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