Understanding the Semantic Attribute of Malay Architectural Ornamentation Using Semiotics Analysis

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Abstract

Malay architecture represents a vital expression of cultural identity, traditionally transmitted through oral practices and craftsmanship rather than written documentation. While previous research has explored both the intrinsic and explicit attributes of Malay architecture, the symbolic interpretation of ornamentation remains underdeveloped, particularly in contemporary design practices that attempt to evoke a "Malay architectural" identity. This study addresses that gap by applying a semiotic approach to analyse the meanings embedded in Malay ornamentation. Focusing on a carved wall panel (*papan ukir*) from Istana Balai Besar in Kelantan, the research employs a dual-layered analysis which consist literature synthesis for ornamentation attributes and semiotic analysis based on the frameworks of Roland Barthes, Umberto Eco, and Charles Jencks. The findings reveal that Malay ornamentation functions as a culturally embedded sign system, comprising both physical (explicit) and spiritual (implicit) attributes. Among the theoretical models used, Eco's coding system proved the most effective in capturing the technical, syntactic, and semantic dimensions of ornament. This study presents a structured methodological framework for interpreting Malay architectural ornamentation, offering practical insights for architects, historians, and conservationists. It affirms the value of cultural semiotics in preserving and innovating regional architectural identity within contemporary practice.

1.0 INTRODUCTION

Post-independence Malaysian architecture has been shaped by a persistent desire to assert a national identity, particularly in response to the influence of colonial and Anglo-Indian design (Kosman & Nik Ibrahim, 2007). Iconic buildings such as Masjid Negara (1965), Bangunan Parlimen (1963), and Muzium Negara (1963) exemplified early attempts to articulate a distinct Malaysian architectural language (Rasdi, 1998). However, later adaptations often suffered from superficiality, employing stylistic mimicry without a corresponding depth of meaning. Approaches such as "ballooning architecture"—where traditional forms are disproportionately scaled—and "cut-and-paste aesthetics"—where ornamental components are arbitrarily applied—reflect this semantic disconnect (Kosman & Nik Ibrahim, 2007).

These tendencies reveal a broader issue: the lack of semantic understanding in the application of Malay architectural ornamentation. The ornaments are frequently reduced to visual motifs without an appreciation for their deeper cultural and philosophical meanings. This paper addresses this gap by proposing a semiotic reading of Malay ornamentation. Rather than viewing these elements as isolated decorations, we position them as components of a culturally embedded sign system that encompasses both explicit (physical) and implicit (spiritual) meanings (Yahya, 1995; Ahmad, 2016; Mohammad Nazzri, 2016).

Using a carving panel from Istana Balai Besar in Kelantan as a case study, we employ semiotic theories from Barthes, Eco, and Jencks to decode how these meanings are constructed. Each theorist offers a unique lens: Barthes through denotation, connotation, and myth (Barthes, 1972); Eco through technical, syntactic, and semantic codes (Eco, 2005); and Jencks through the interpretive semiotic triangle (Chapman et al., 2004; Steen, 2015). A critical application of these frameworks, particularly Eco's coding model, enables a richer understanding of how Malay ornamentation conveys meaning.

This paper ultimately contributes to a deeper theoretical understanding of architectural semiotics in Southeast Asia and supports efforts toward more culturally sensitive design, restoration, and education in the built environment.

2.0 LITERATURE REVIEW

2.1 Semantic in Malay Architectural Ornamentation

The semantic dimension of architecture—central to this thesis—remains a subject of ongoing debate among researchers, architects, and scholars. In the context of Malay architecture, the precise meaning of "semantic" is still under-explored and lacks a unified interpretation. This ambiguity may stem from the absence of an articulated framework that defines what constitutes Malay architecture. More specifically, there is still limited clarity regarding the grammar, taxonomy, themes, codes, or other categorical systems that can systematically explain its architectural identity. These varying attributes significantly influence how the meaning of specific ornamental elements is conveyed and interpreted.

2.2 Semantic attributes for Malay Architectural Ornamentation

2.3.1 Function attributes

If defined in a literal sense, the function of an ornament can be seen as its role, which is usually related to its use as a decorative element for a building component. There is also some ornament that would provide an additional function; for example, a Papan Pator (fascia board) serves mainly to decorate the edge of the roof end. However, at the same time, it also provides a covering for the Kasau (roof rafter) from direct exposure to rain and sunlight. Another component, such as Papan Ukir tebuk tembus (decorative wall panel), typically found on the wall of a dinding janda berhias (Janda berhias wall), serves an additional purpose by allowing natural lighting and ventilation into the building.

In some cases, the function of ornament can be spiritual for a specific group of people who possess a semantic understanding and wisdom regarding Malay ornamental components (Zainal Abidin, 2020). As stated earlier, there is an implicit attribute associated with the Malay ornament. Thus, these groups of people, typically master craftsmen and other knowledgeable individuals, would be able to discern the meaning of implicit attributes in the ornament, thereby establishing a deeper spiritual connection that allowed them to feel and think more deeply.

A clear example is the Malay ornament component Buah Buton (finial), which in some areas is defined as a remembrance of death, as all humans will one day die and return to God, which is related to the fact that the form of Buah Buton symbolises a Batu Nisan (tombstone) in a cemetery. Reminder to death is a good reminder for Muslims as one hadith state that,

"from Abu Ya'la Syaddad bin Aus RA, from Nabi SAW bersabda: "a clever person is a person that prepares themselves with good deeds for preparation for the afterlife, while a weak iman person is someone who follows his lust and day dream forgetting ALLAH SWT can forgive him." Said Abu 'Isa: "Hadis ini hassan." (Hadis Riwayat At-Tirmidzi, no 2459)

It is clearly stated here that a spiritual function is a significant aspect for people to understand.

2.3.2 Carving technique attributes

Carving techniques are the methods used by craftsmen to create carvings for ornaments. There are two ways to carve a Malay ornament: for a flat carving, and the second is for 3-dimensional carving, which is usually limited to the "Tunjuk langit" (finial) component. Based on the research by Hafiza, each method would have a total of 4 techniques, which are Ukiran Tebuk Timbul Bersilat (embossed Silat carving), Ukiran Tebuk Timbul tidak Bersilat (embossed carving), Ukiran Tebuk Tembus Bersilat (Full incision carving with Silat) and Ukiran Tebuk Tembus tidak Bersilat (Full incision carving) (Hafiza et al., 2014). According to Institut Kraft Negara, there is an additional technique called Ukiran Layang, and the silat technique is also categorised into five typologies: Silat Belah Rotan, Silat Serong, Silat Leper, Silat Dada Tuma, and Silat Minangkabau.
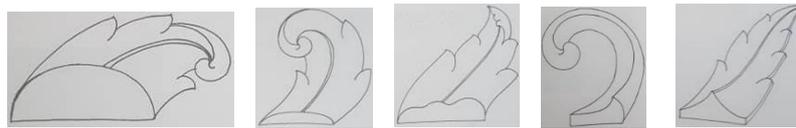

Figure 1. from left, Silat Belah Rotan, Silat Serong, Silat Leper, Silat Dada Tuma and Silat Minangkabau
Source: (Kraftangan, P. P, 2009) (Muhamad, N. A. ,2009)

2.3.3 Material attributes

In addition to the skill of the woodcarvers, which is a determining factor in creating the carving, another key factor is the abundance of tropical hardwood species. Thus, timber constructions and even the ornamentation of houses, mosques, palaces, entranceways, gateways, tombs, pavilions, and boats were made from heavy hardwood species. These species are strong, durable, and resistant to fungi, powder-post beetles, and termites (Said, 2005). According to the late Nik Rashiddin, before working on the timber, craftsmen must first select a piece that is free from all defects, namely knots, pith flecks, resin streaks, brittle hearts, checks, splits, decay, bowing, and cupping (Said, 2005). Some of the most well-known timber species used in Malay ornament making are Chengal, Merbau, Balau, Jelutong, Nyatoh, and Meranti Merah (Muhamad, N. A., 2009).

In some cases, the choice of timber material became a spiritual process. For example, Malay craftsmen also select timber based on its spiritual properties, which can possess either beneficial or detrimental value (Farish A. Noor, 2003). Other timber species, such as Kemuning and Kenaung, are regarded as the most auspicious because craftsmen believe they possess strong spirits that will accompany a weapon, such as a kris, badek, kerambit, or spear (Said, 2005).

2.3.4 Placement Attributes

There are many methods for distinguishing the typology of ornament, and one of the easiest and most literal ways is by its placement. Typically, traditional Malay architecture can be categorised into three areas: the head (roof), body (wall), and feet (floor). Each of the categories had its specific type of ornament attached to it. Symbolic, as used by Yahya (1995), is part of the semantic translation from the three parts of a building, which is a metaphor for human bodies.

Another typology is related to its role, which can be grouped into three types. The type is structural, decorative and functional. Generally, most ornaments had all role typologies, but the role was split into its primary role and secondary role. For example, some ornaments had their primary role in decorating the building façade, but also served a secondary purpose in allowing ventilation into the building. By

distinguishing the different roles of ornament, a more profound meaning is extracted. Overall, each ornament may have all three roles, but a different degree of importance for each role balances out the other roles. Thus, the subjective balance between each role would create a masterpiece when applied to a heritage building found across Malaysia.

2.3.5 Composition Attributes

Every building design has its unique composition, whether intentional or not. This can also be applied to Malay architecture. According to Wallschlaeger and Busic-Snyder (1992), the visual organisational principles are used to construct the relationship among the visual elements of form, the compositional elements, and the intended meaning. According to Zumahiran, there are two types of modes for composition in Malay architecture. The two modes are macro and micro composition.

Macro-composition

Macro-composition refers to the analysis of composition through a broader perspective. For a Malay building, the composition is based on the overall elevation views of the building. The composition is based on the placement and arrangement of each component that makes up the whole building. Research conducted by Tengku Anis (2018) examines the different compositions of the Malay Palace (Kadir et al., 2018). Based on Figure 2.15 below, a matrix of Malay architecture palaces is formed from her research. In her research, the macro-composition was found from various case studies of Malay Palaces throughout the Nusantara region. The findings include the macro-composition, categorised into five typologies: Axial form, Binuclear form, Perbung lima, Peristyle, and Asymmetrical.
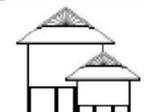
▢ Timber ▨ Brick	1	2	3	4	5
Axial Form	Istana Melaka	Panglima Ghani House, Melaka	Bytul Anwar, Perak	Dato Biji Sura House Terengganu	Istana Bandar, Selangor
Binuclear Form	Istana Seri Menanti, N Sembilan	Istana Lima Laras, Batu Bara	Baitul Rahmah, Perak	Istana Darul Aman, Langkat	Istana Hulu, Perak
Perabung Lima	Istana Kenangan, Perak	Istana Leban Tunggal, Pahang	Istana Jahar, Kelantan	Istana Bilah, Perak	Istana Ternate, Maluku
Peristyle Form	Masjid Kg. Laut, Kelantan	Istana Inderagiri, Renggas	Istana Damnah, Riau	Istana Balai Besar, Kedah	Istana Sultan Abu Bakar, Johor
Asymme-trical	Istana Tg. Long, Terengganu	Kutai House, Perak	Aristocrat House, Penang	Aristocrat House, Kelantan	Villa Tengku Kudin, Penang

Figure 2. Matrix of Malay architecture palace – form and its materials. Source : (Anis et al., 2018)

Micro-composition

Micro composition is related to a more refined detail part of a Malay building architectural form. The composition examines the component closely in its form. One of the most common components to be analysed in micro-composition is the *papan ukir* (carving panel). This component is typically designed with a high level of detail and a more complex composition. The micro composition typically consists of four fundamental principles, as outlined in Said's research: symmetry and balance, repetition, order and harmony (Said, 2013). Most of the composition will involve a unique arrangement of the elements in the carving, which include the Punca or Benih (source, seed), Batang or Sulur (stem), Daun (Leaf), Bunga (Flower), and other motifs, such as fauna and cosmology. Each of the elements will also have its typology with a specific symbolic meaning.

Zumahiran (2008) conducts in-depth research into the composition of papan ukir for her study. (Kamarudin & Said, 2008). The figure below is an example of the analysis conducted by Zumahiran (2008) on papan ukir in the building case study, Rumah Bujang Berserambi Dua Beradik.
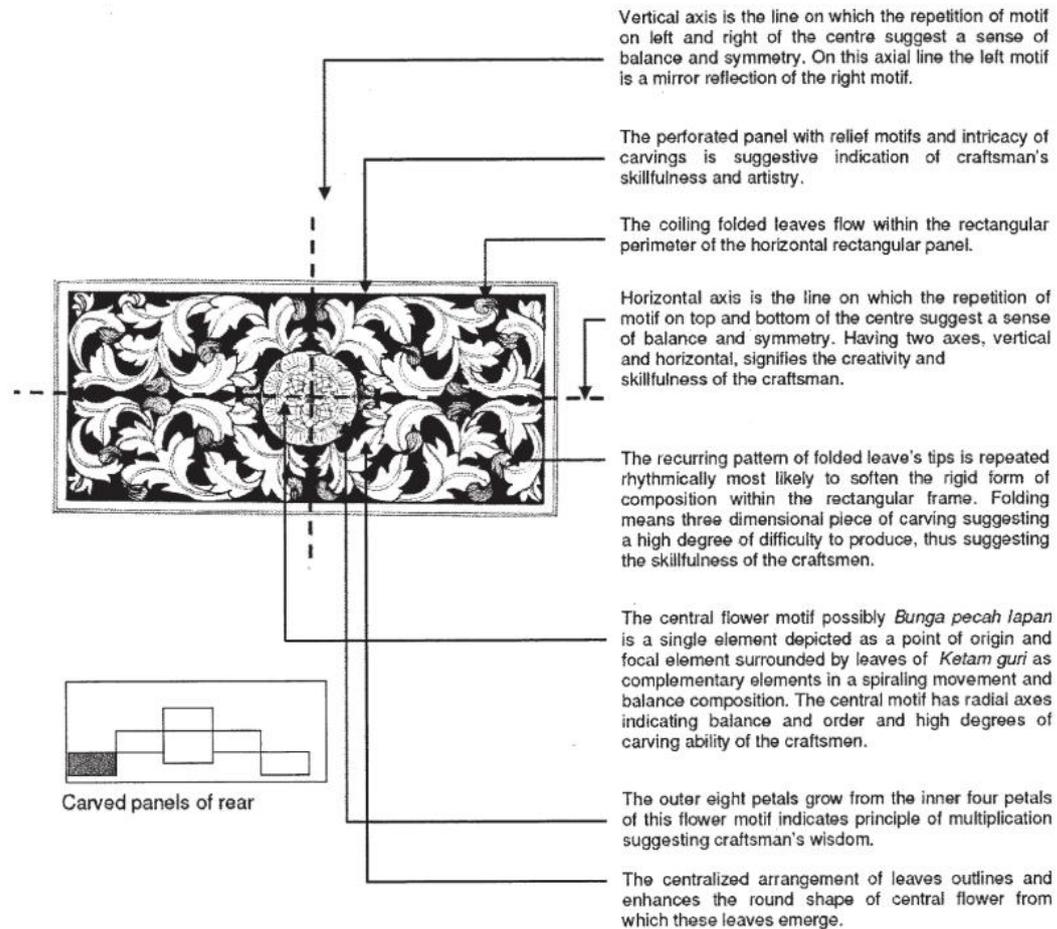
Vertical axis is the line on which the repetition of motif on left and right of the centre suggest a sense of balance and symmetry. On this axial line the left motif is a mirror reflection of the right motif.

The perforated panel with relief motifs and intricacy of carvings is suggestive indication of craftsman's skillfulness and artistry.

The coiling folded leaves flow within the rectangular perimeter of the horizontal rectangular panel.

Horizontal axis is the line on which the repetition of motif on top and bottom of the centre suggest a sense of balance and symmetry. Having two axes, vertical and horizontal, signifies the creativity and skillfulness of the craftsman.

The recurring pattern of folded leave's tips is repeated rhythmically most likely to soften the rigid form of composition within the rectangular frame. Folding means three dimensional piece of carving suggesting a high degree of difficulty to produce, thus suggesting the skillfulness of the craftsmen.

The central flower motif possibly *Bunga pecah lapan* is a single element depicted as a point of origin and focal element surrounded by leaves of *Ketam guri* as complementary elements in a spiraling movement and balance composition. The central motif has radial axes indicating balance and order and high degrees of carving ability of the craftsmen.

The outer eight petals grow from the inner four petals of this flower motif indicates principle of multiplication suggesting craftsman's wisdom.

The centralized arrangement of leaves outlines and enhances the round shape of central flower from which these leaves emerge.

Carved panels of rear

Figure 3. Composition semantic analysis. Source : (Kamarudin & Said, 2008)

Elements in Malay Ornamentation

The composition of the component is studied in detail, starting from the language of composition that was discovered upon closer analysis. Figure 2.16 above illustrates that the carving component featured a symmetrical composition, characterised by a clear vertical axis, as evident in the central placement of the flower motif. Each side of the central floral motif is a mirror image of the other.
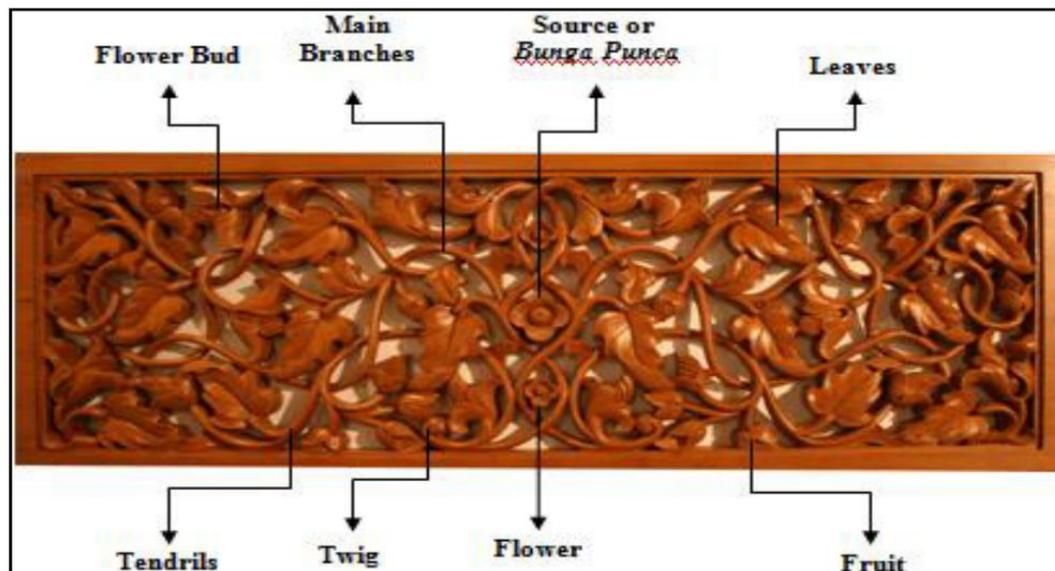
Figure 4. Malay elements. Source : (Kamarudin & Said, 2008)

2.3 Malay Architectural Ornamentation Implicit Attributes

2.3.1 Motif Attributes

The application of motifs in Malay architectural ornamentation stems from every craftsman, as they manifest their ideas through their designs. Creating a new motif is closely related to the traditions and influences inherited from one generation to the next (Nasir, 1986). Race can be identified through the use of its unique motif design by the craftsmen (Jasmani et al., 2020). Each motif can be differentiated by the art type from different places, districts, and states (Hafiza et al., 2014). Motif creation is a fundamental process, as it can elevate Malay craftsmanship to a higher level and garner recognition for its sophisticated creations.

In terms of motif usage, four motifs are generally known as flora, fauna, geometric, and calligraphy. Each of the motifs holds its specialty, which, upon observation, can bring the viewer peace of mind. All produced motifs can also be related to the craftsman himself in his daily life. Therefore, all motif forms created are also used to teach people how to conduct their daily lives.

2.3.2 Philosophy attributes

As Mohd Affendi Yahya (1995) stated in his book, woodcarving is strongly associated with Malay ornamentation, which is created not only as a functional item, but in reality, it has an intricate philosophy and principle for a specific community (Yahya, 1995). In a research study conducted by Mohammad Nazri (2016), he found that there are two ways to define the semantics of Malay woodcarving: first, based on the thought behind the design form of a motif, and second, based on the name of the motif (Mohammad Nazri Bin Ahmad, 2016).

"The shape of Malay carving takes importance on the 'sifat gerak' (movement character), which started from the 'punca' (source) and continues growing, winding or twisting. Normally, the carving would have a balance between the positive and negative (solid and void). While a controlled Form of a motif in a modest design without exaggeration. At its end, the carving designs are rarely vertical or curved far from the overall composition. The focus is on the modesty character. The carving is arranged and composed in a big space like the panel on top of a door that had no clear ending of its edge" (Syed Ahmad Jamal,1992)

Based on the words of Syed Ahmad Jamal (1992), this is one of the secrets that need to be known and investigated not only from the minds of carving craftsmen but also from the Malay Community as a whole. The interpretation of philosophy for Malay ornament is dependent on the explicit form of its design and the knowledge and skill of the craftsmen.

2.3.3 Symbolic attributes

Symbol or symbolism had a deep connection with people and their culture. Because of this connection, humans are recognised as symbolic beings; this is undeniably true, as creating a culture is filled with

symbolism and values rooted in human wisdom (Yahya, 1995). Thus, the effect of symbolism on Malay Ornamentation is evident. As stated before, the attributes of Malay ornamentation can be categorised into two sides: explicit and implicit. Symbolic is part of the implicit attributes that are closely related to the explicit attributes of an ornament. The interpretation of explicit meaning would be defined as implicit meaning. Much of it is from symbolic attributes.

For example, the Malay ornament component Pemeles (gable end fascia board) had a symbolic reference to the human hand supporting the human body. Pemeles is the symbolic support of a building, which is Jalal's character (greatness). In other cases, the Pemeles carved with a Makara motif have a symbolic representation of the sacred understanding of Nur Muhammad (Yahya, 1995).

2.3.4 Malay concept of Aesthetic

The concept of beauty in a Malay ornament is based on its overall attributes. Several theories exist regarding this concept. The theory is attributed to Al–Ghazali, Abdullah ibn Muhammad, Sulaiman Esa, Ruzaika Omar Basaree, and Zakaria Ali. The table below indicates a comparison of some of their theory related to beauty.

Table 1. Malay Concept of Beauty

Theory	Malay beauty concept
Al–Ghazali	Three stages of beauty • Physical beauty (Dhahir) • Moral beauty (Batin) • Spiritual beauty (Spiritual)
Abdullah b. Mohamaed (Nakula)	Malay aesthetic, in its essence, is related to GOD • Jamal: beauty • Jalal: greatness According to Nakula Jalal, a character would always be hidden and oppressed by the Jamal character (Muhamed, 1956).
Sulaiman Esa	• Refine (kehalusan) • Flexibility (Kelembutan) • Balance (keseimbangan) • Unity (Kesatuan) • Functional (fungsi) • Symbolic (simbol)
Zakaria ali	• Finesse (kehalusan) • Usefulness (fungsi) • Unity (Bersatu) • Contrast (berlawan) • Symbols (lambang)
Ruzaika Omar Basaree	• Spiritualism or Mysticism • Unity depicting harmony • Symbolism • Refinement • Symmetry • Flexibility • Functionality • Revised version based on the study made by Zakaria Ali and Sulainlan Esa

| Syed Ahmad Jamal | • Alam – Idea – Karya – idea |
| | • Physical and Spiritual process between the creator and the user (perceivable) |

The first obvious similarity between each theory is that they are all based on the Islamic perspective. Each view relates to GOD as the creator of everything, which concurrently became the main inspiration for the works of Malay Arts. The Malay concept of beauty also aligns with al-Ghazali's notion of the beautiful, which encompasses both the outer and inner aspects of beauty (Idris et al., 2016). The earliest views are by Al–Ghazali, one of the most prominent Islamic scholars, who looks at beauty in three stages: physical, moral, and spiritual. Abdullah also strengthens the view by relating to the concept of Jamal and Jalal.

The views of Zakaria Ali and Sulaiman Esa had similarities and were further revised by Ruzaika. Each of these views can help in describing the beauty of Malay ornamentation. These views are further discussed from the semantic perspective. The figure below is a summary of the table above. The figure indicates that the views of Al Ghazali and Nakula both shared the same concept of outer (physical/jamal) and inner beauty (spiritual/moral/jalal). However, not directly the same, they still shared that same character. While Ruzaika Omar further revises the views of Sulaiman Esa and Zakaria Ali into a more comprehensive outlook on the Malay concept of beauty, their opinions are more detailed in describing this concept. The revised version by Ruzaika also demonstrated that there is still an inner and outer beauty associated with the seven concepts of Malay beauty.
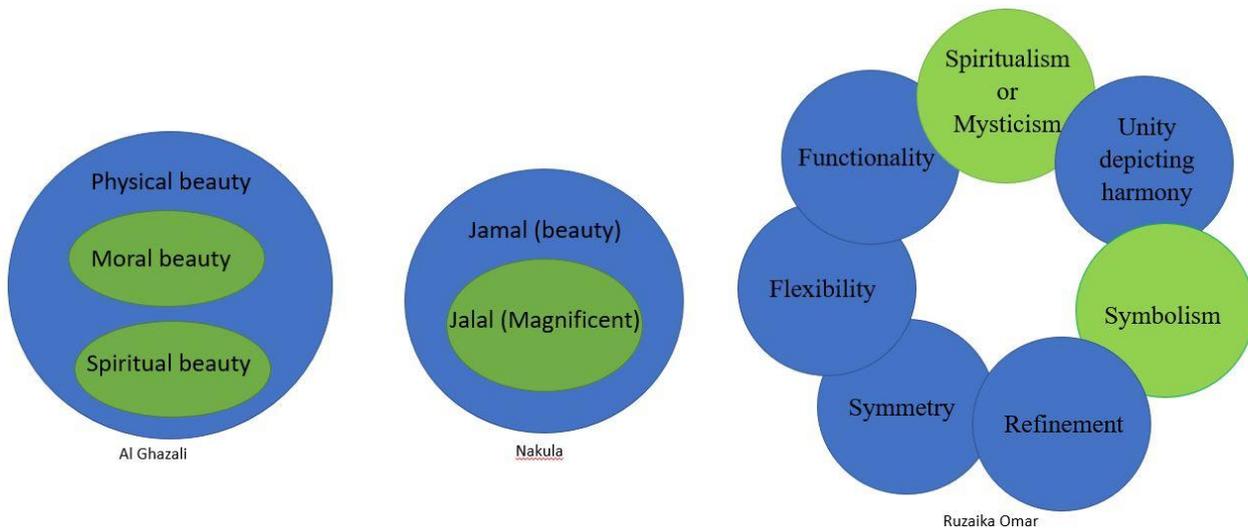
Figure 5. Summary of a conceptual diagram on Malay Beauty. Source: author

Based on Syed Ahmad Jamal's (2000) research, he states that the Malay conceptual understanding in Art and Design also involves Malay ornamentation. It is born from the realisation about the key theme in creating something, where shape and form merge to create a single Art piece. In a more straightforward explanation, the process involves a path between the physical and spiritual, which manifests in the relationship between the creator's soul (the designer/craftsman) and their user (the one who perceives).

<p style="text-align:center">ALAM ---- IDEA ---- KARYA ---- IDEA</p>

The art process is considered finished when viewers and followers can understand the idea and inspiration behind the art piece (Malay ornament) that originates from nature. However, the overall process is subject to an objective interpretation that aims to bring meaning to the interpretation between the Designer and their user (Syed Ahmad Jamal, 2000).

Each of the expert views would be similar because Malay beauty is based on the relationship between physical and spiritual attributes of art, which is the Malay Ornament in this study.

2.4 Semiotics in Architecture

The simplest definition of semiotics is the study of signs. While this provides a basic understanding, it is insufficient on its own, as the term sign is broad and open to various interpretations. Umberto Eco offers a more expansive definition, stating that "semiotics is concerned with everything that can be taken as a sign" (Eco, 1976, p. 7). In this sense, semiotics encompasses not only what we typically refer to as signs in everyday language but also anything that represents or stands for something else.

In architecture, the building itself can be understood as a sign. Within the context of living heritage, architecture functions to support human activity, with users acting as central agents or subjects (Suprapti & Iskandar, 2020). Therefore, interpreting the meanings embedded in architectural expressions is crucial—and semiotics becomes a valuable tool for reading and understanding these expressions.

Semiotics plays a significant role in architecture and its related fields. Although semiotic principles have been implicitly used since antiquity, the first explicit philosophical reference appears in John Locke's An Essay Concerning Human Understanding (1690), where semiotics is proposed as a branch of knowledge. Semiotics enables the interpretation of real-world phenomena through the reading of signs. In architectural and urban contexts, semiotics is often aligned with aesthetic perspectives, treating buildings and cities as texts whose meanings emerge through a process of interpretation or semiosis (Ghafari et al., 2015).

Various theoretical frameworks have been developed to apply semiotic principles to architectural research. The table below outlines some key semiotic theories that have been used in architectural studies.

Table 2. Semiotic theory.

Philosophers	Pattern	Classification	Characteristic	Function
Saussure	Two–Part pattern	• Signifier • Signified	The relationship between the signified (concept) and its signifier (sound-image) is entirely arbitrary.	
Pierce	A three-part pattern including representamen, an object, and an interpretant	• Representamen • Interpretant • Object • Icon, • index, symbol • Syntactic,	Introduce the role of an observer or individual (the Interpretant). Introduces a new political structure that is enabling rather than static	
Umberto Eco		• Primary Function • Secondary function • Technical Codes • Syntactic Codes • Semantic Codes	Explore the semiotics in architecture through the understanding of the "function" of a building and its components. Furthermore, introduce a method to categorise the "sign" using codes.	
Roland Barthes	Two levels of phonetic, expressive and semantic elements	• Denotation • Connotation • Myth • Implication stages • Stage one: explicit (Implication) meaning • Stage two: implicit (Implication), meaning • Stage three: myth (a combination of	Introduce the system of signification that creates a series of connotations that eventually lead to a myth.	

		explicit implication and	
Charles Jencks' interpretation of Ogden and Richards' semiotic triangle.	Three-Part pattern	• Symbol • Thought • Referent	incorporates aspects of both Peirce and Saussure's theories (Chapman et al., 2004) introduces the practice of interpretation (thought) itself (the act of thinking about something). Different to the "interpretant" of Peirce. It is not an individual but the act that Jencks is concerned with.

According to the table above, Saussure and Pierce are considered early pioneers in semiotic theories. Still, their theories are limited to a particular group of knowledge, including linguistics, philosophy, and others. The work of this pioneer has led to subsequent research by other researchers, which interprets the theory of semiotics in the context of architecture. The three researchers who have made significant contributions to semiotic theory in architecture are Roland Barthes, Umberto Eco, and Charles Jencks. Each of these researchers had their interpretation of architecture, informed by semiotic theory.

In the 1960s, Roland Barthes was among the first to develop this theoretical idea further. Barthes observed that sign science has further developed into a broader range of systems, encompassing not just language. Barthes linked semiotics to any system of signs, no matter the content or limits of that system—semiotic meaning derived from images, sounds, gestures and objects. Barthes developed the Saussure view by focusing on the method of producing signs. Barthes states the implications of the signifier and its signified, based on Saussure's theory, which is translated into three stages. The three stages are explicit, implicit, and Myth (Muhammad Hasyim, 2015).

Umberto Eco, in his article 'Function and Sign: Semiotics of Architecture, ' applies his general semiotic theory to the question of architecture and the built environment. Architecture, Eco notes, presents a special case as it is often primarily functional and not communicative. Nonetheless, architecture does function as a form of mass communication. As stated before, semiotics is the study of signs, and from the perspective of architectural studies, the "architectural object" is considered a sign. So, Eco's explanation of architecture as a sign begins with its definition, encompassing denotation, connotation, primary function, secondary function, and codes. The codes, according to Eco, are divided into three. First is technical code related to a structural building logic. The second is syntactic code or space codes, which refer to the positioning and how architectural components are connected. The third is semantic code, which focuses on the secondary and implied signification of architecture. The semantic code further breaks down into four subcodes: primary function, secondary function, connotation, and social function (Eco, 2005).

These codes focus on the secondary and implied signification of architecture, where the individual elements of architecture, concerning one-to-one and implied implications, produce a deeper meaning. Eco divides semantic codes into four types: a) The codes with a primary function, such as roofs, stairs, and windows. b) The code which has a secondary, implied function, such as a Facade, a ventilator and a frame. c) Codes which produce connotation of ideological settlement such as panjdari (five windowed room),

Charles Jenks referred to the views of Ogden-Richards and Hjelmslev, who are followers of Saussure and Barthes (Suprapti & Iskandar, 2020). Odgen-Richard put forward the idea of architectural signs in the Semiotic Triangle. Charles Jencks interprets it from an architectural perspective.
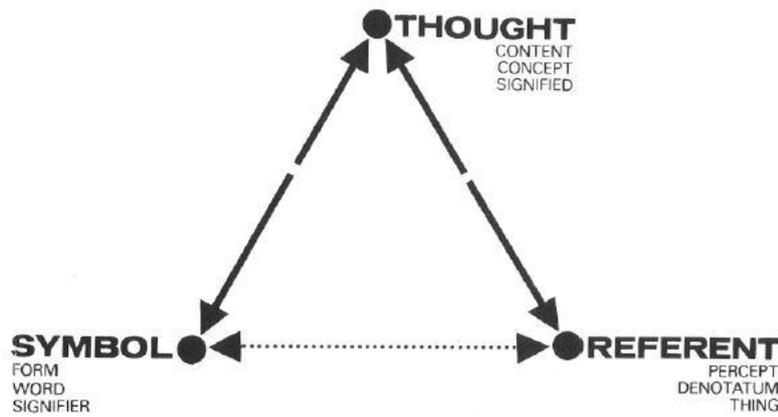
Figure 6. Charles Jenkcs' semiotic triangle. Source : (Steen, 2015)

According to Jenkcs et al., a signifier (Symbols, Forms, Word) provides connotations of a signified (Concept, Thought, Content), and it is possible to show an object (Referent, Object, percept) or Actual Function In Architecture. (Suprapti & Iskandar, 2020). The relationships between these three aspects are essential for determining the types of architectural signs (indexical, iconic, or symbolic) based on Pierce's semiotic theory. Jenks' interpretation of semiotics was considered necessary as he applied his understanding of semiotics to his building. One of Jencks's famous architectural works is his "Elemental House" and "Thematic House" from the early 80s, which provide an orgy of meaning through architectural codification (Chapman et al., 2004).

Each philosopher had their understanding of semiotics, and each of them shared some similarities in a specific aspect. Based on each philosopher's ideas on semiotics, the understanding of Eco, Jenkcs and Barthes had a profound impact on architecture discourse. The semiotic analysis of this research will be based on the three semiotic approaches, as shown in the figure below. The analysis will be on the attributes of Malay Ornamentation.
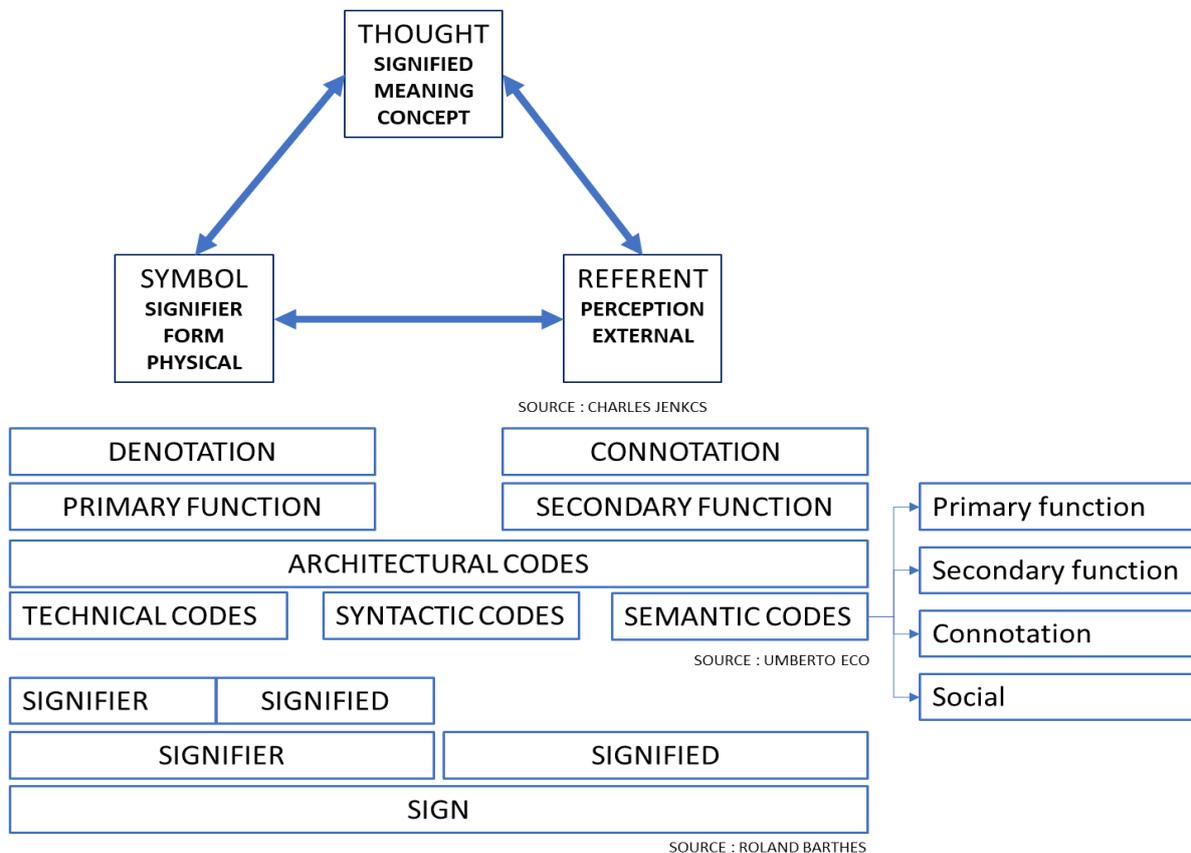

Figure 7. Diagrammatic views on a different semiotic approach. Source: (Author)

Ornamentation attributes are generally divided into two types: intrinsic and explicit value. Intrinsic value is related to the physical attributes that can be experienced directly by a person. In contrast, explicit value is associated with the spiritual attribute that can only be experienced indirectly. An explicit attribute consists of carving technique, function, material, form, composition, and placement. On the other hand, the Intrinsic attribute comprises a motif (the meaning of the motif used), philosophy, aesthetics, and symbolism. However, some attributes could be both explicit and implicit, which will be further discussed. In addition, each attribute would have its typology, which would further personalise the design of an ornament.

3.0 METHODOLOGY

This research employs a qualitative methodology grounded in a theoretical and interpretive framework. The study integrates literature synthesis with applied semiotic analysis to investigate the semantic attributes of Malay architectural ornamentation. Figure eight (8) illustrates the step-by-step analytical framework, which consists of two main phases: (1) the identification and classification of Malay ornamentation attributes through literature synthesis; and (2) the application of semiotic analysis to those attributes (figure 9) to interpret their explicit and implicit meanings.

3.1 Selection of Case Study

The Istana Balai Besar in Kelantan was chosen for its historical and cultural significance. The palace is noted for its richness in traditional Malay ornamental elements, particularly its carved wall panels (papan ukir), which display a high degree of symbolic craftsmanship. The specific panel selected was documented in the Universiti Teknologi Malaysia (UTM) KALAM heritage report and further substantiated through photographic and descriptive archives.

3.2 Data Collection and Attribute Extraction

Data was extracted from a combination of scholarly literature, field documentation, and archival resources. Ornamentation attributes were first categorised into explicit (e.g., material, technique, motif) and implicit (e.g., symbolic, philosophical, spiritual) based on established frameworks (Ahmad, 2016; Said, 2013). Each attribute was cross-referenced with documented interpretations in academic texts and, where available, supported by document commentary and ethnographic descriptions.

The research method would include an extensive literature review on Malay ornamentation attributes from a broader perspective. The literature is compiled, categorised, arranged, and analysed through semiotic analysis based on the findings in the literature on semiotics. Then, each theory of semiotics is applied and tested with the data from Malay ornamentation attributes. To conclude, the first step in the research method is to categorise and analyse the overall attributes of Malay ornamentation as a whole. The next and final part is to analyse the attributes data with semiotic theories. Figure eight (8) bellowed explains on the 2 step by step data collection to analysis process.
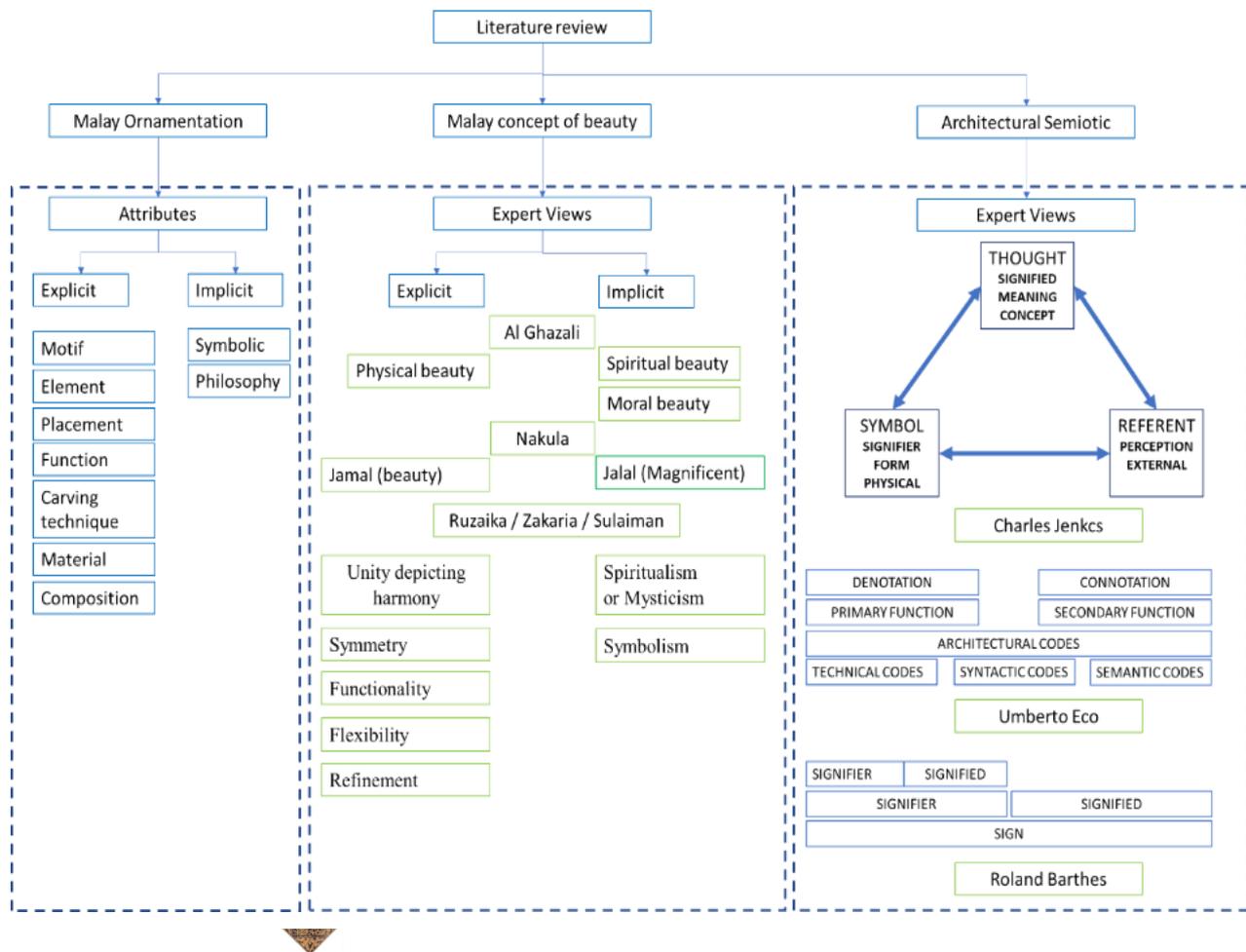
Figure 8. theoretical framework of research method. Source : (author)

4.0 RESULT AND DISCUSSION

4.1 Categorizing Malay Ornamentation Attributes

According to the literature review, the categorisation of Malay Ornamentation attributes is illustrated in the figure below. The attributes are divided into two categories: explicit and implicit. The two categories are further defined based on their relation to the concept of Malay Beauty as presented in literature and figure eight (8). A total of nine attributes are extracted from the literature, where two are implicit and seven are explicit. Within each attribute, there are sub-attribute categories. In a more straightforward explanation, implicit attributes are those that are not physically visible to human physical perception but are discernible in human spiritual thinking. The explicit attributes are based solely on what a human can see and perceive.
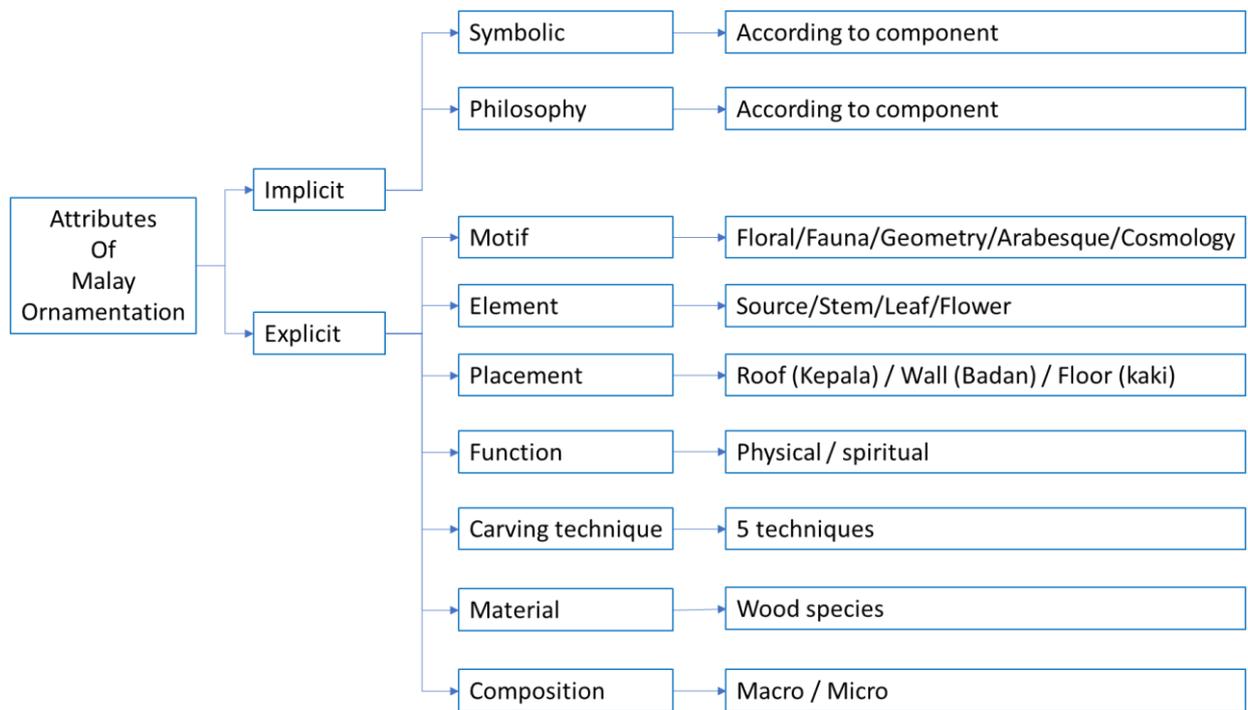
Figure 9. Diagram of the overall Malay Ornament Attributes. Source: (Author)

The relationship between Malay ornamentation's explicit and implicit attributes is related to how a person perceives it. Based on the figure below, in Malay ornamentation, each explicit attribute has an implicit interpretation, specifically its symbolic meaning. The overall symbolic meaning and its relation to the explicit would produce a philosophical understanding. The relationship between the two attributes is based on the Malay concept of beauty, which emphasises the importance of both outer (explicit) and inner (implicit) beauty.
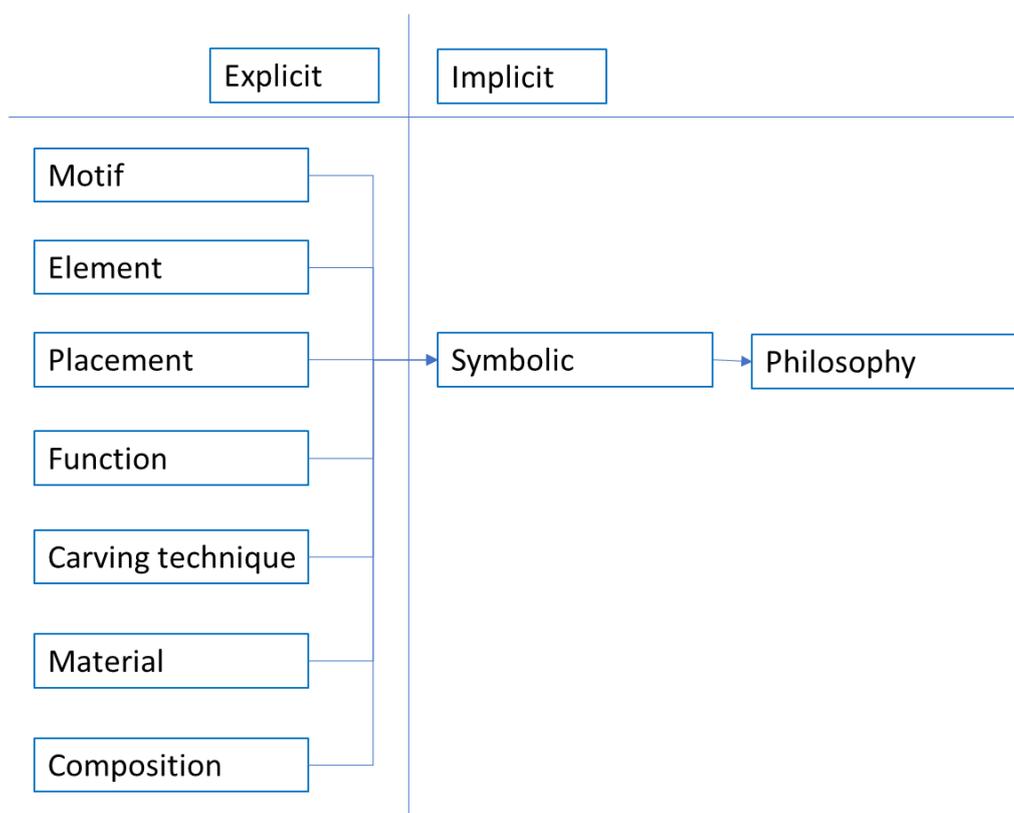

Figure 10. Diagram of the relationship between explicit and implicit attributes. Source: (Author)

To discuss further, one Malay ornamentation component from a building case study was chosen for analysis to examine its explicit and implicit perspectives. The component selected is a Decorative wall panel taken from Istana Balai Besar as the case study. The case study data is taken from the Istana Balai Besar Kota Bharu UTM KALAM report. This specific component had been chosen because its has both implicit and explicit qualities that could be recorded in its design. Thus, making it a good case study for it to be used in semiotic analysis. Below is the information on attributes for the component, it is a combination of the literature review and the report.

Table 3. Attributes of Carving Panel component from Istana Balai Besar Kelantan
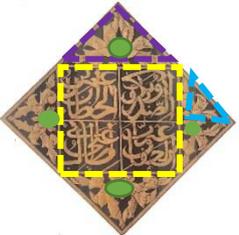
Building: Istana Balai Besar	Attributes					
Ukiran Khat Empat Sahabat Nabi	Explicit	Motif	Floral (Purple dash)	Calligraphy (Yellow dash)		
		Element	Source (Light Green dash)	Leaves (Light Blue dash)	Flower (Purple dash)	Calligraphy (Yellow dash)
		Placement	Wall			
		Function	Wall decoration			
		Carving Technique	Silat Leper	Half Incision		
		Material	Wood			
		Composition	Symmetry			
	Implicit	Symbolic	Remembrance of Prophet Muhammad Sahabah			
		Philosophy	Islamic teaching as the core principle in ornamentation design			

Based on the above table of component attributes, the data for each attribute is input based on the literature and reports. The data input method is based on the research by Samsudin et al. (2020). The study acknowledged limitations in inputting data into a component; therefore, a combination of both literature and reports would provide sufficient data.

4.2 Relationship between Explicit and implicit attributes

To further explore the relationship between the explicit and implicit data, based on Figure 5, another table is created to explain the relationship between the two attributes.

Table 4. Attributes of Carving Panel component, the relation between explicit and implicit attributes

Building: Istana Balai Besar	Explicit	Implicit
	Motif	
Ukiran Khat Empat Sahabat Nabi	Floral (Purple dash)	**Daun sembung**
		Bunga ketam guri The use of ketam guri in Malay life has excellent benefits, especially in medicinal use (Ahmad, 2016)
	Calligraphy (Yellow dash)	**Islamic Belief** The calligraphy motif would be a connotation of Islamic belief (Ismail bin Said, 2008)
	Element	
	Source / Flower (Light Green dash)	**Punca bunga** Symbolic representation of the origin and start of life. The blooming of flowers represents the glory of God in giving life to its creation (Ahmad, 2016)
	Leaves (Light Blue dash)	**"Tajam tidak menujah lawan" (Sharp without opposing each other)** The flower arrangement towards its end does not point at each other, which symbolically portrays the need for all human beings to avoid conflict and be kind to one another (Ahmad, 2016).
	Calligraphy (Yellow dash)	**Remembrance of Prominent Muslim Leader** The calligraphy is spelling the name of Khulafa al-Rasyidin. Often called, collectively, "the Rashidun", are the spiritual and political successors to the Islamic prophet Muhammad in the Sunni jurisprudence of Islam, refers to the 30-year reign (632–661) of the first four caliphs (successors) following the death of Muhammad, namely: Abu Bakr, Umar, Uthman ibn Affan, and Ali of the Rashidun Caliphate, the first caliphate.
	Placement	
	Wall	-
	Function	
	Wall decoration	
	Carving Technique	
	Silat Leper	
	Half Incision	
	Material	
	Wood	
	Composition	
	Symmetry	
		Symbolic
		Remembrance of Prophet Muhammad Sahabah
		Philosophy
		Islamic understanding

The table above shows that there would be an implicit interpretation for most explicit attribute. This clearly shows the Malay concept of Art interpretation. In the case of Malay ornament, it is always based on the connection between the physical (explicit) and spiritual (intrinsic). The design thinking process of a craftsman would have a deep consideration of both aspects of attributes, namely, implicit and explicit. Through this finding, it is clear that the attributes of Malay Ornaments are interrelated to one another. For each physical attribute, there would be a symbolic meaning behind it. The next part of the analysis involves linking the attributes to semiotic theory.

4.3 Analysing Semiotic theory on Malay Ornamentation attributes

The previous analysis of Malay Ornamentation attributes identifies two main groups of attributes: explicit and implicit. Based on Figure 10, it is explained that every physical attribute translates to a single symbolic meaning. The analysis explores the understanding of implicit and explicit concepts from a semiotic theory perspective. Using semiotic analysis, the explicit and implicit meanings of Malay ornamentation can be reanalysed into two levels. The first level of analysis focuses on the general aspect of the component, while the second level analyses each component's attributes. The general aspect, according to this research definition, is the overall impression of the component. For example, when a human looks at a house, the type of house is the first thing they identify. The human identifies the house as a house. The named bungalow house is the general aspect of the house, i.e. the first level. In comparison, details such as the number of rooms or columns could be considered house attributes, e.g., how many level? or how many windows? etc.

4.3.1 Semiotic Analysis

Table 5. Pierce Semiotic analysis on Carving Panel case study

Charles Jencks Semiotic		
Representment / Symbol / Signifier	Interpretant / Thought / Signified	Object / Referent
Physical architectural component	*The idea of the physical component*	*The social aspect of what the component refers to*
	Denotation Papan Ukir (Carving panel)	A decorative component for a building
	Connotation A panel for decorative purposes A component that can reflect the status of its owner A reflection of Islamic belief in the owner	The use of this component indicates the status of its owner

Based on Jencks's view on semiotics, the Malay ornament component can be easily distinguished and further interpreted. The representation refers to the physical aspect of the Ornament component. At the same time, Interpretant is based on the thought process of defining the ornament component, shifting from denotative to connotative meanings. Lastly, the object or referent is based on the external social aspect of the ornament in relation to its surroundings. Although the analysis is simple, Pierce's semiotic analysis still manages to decode and categorise the data from the sign (Ornament component/case study).

Table 6. Barth's Semiotic analysis of the Carving Panel case study

Roland Barth		
Denotation	**Connotation**	**Myth**
A component that functions as a decoration for a Building	*A component that beautifies the building façade physically and symbolically*	
	A decorative component that reminded the viewer of the role of Sahabah (the Prophet Muhammad's companions) in the process of spreading Islamic life throughout the world	*A reminder of the fact that to be a Muslim, one must go through hardship in life.*
	The use of nature and calligraphy motifs indicates the importance of Islamic belief in the Malay Culture. Islamic belief prohibits the use of living things as a motif; therefore, a natural motif is the best choice. Calligraphy demonstrates the influence of Islam, which uses Arabic letters as its primary language and script.	*A reminder that no matter how great the ruler's power, he is still a servant of God.*
	The use of the decorative component relates to the social status of the building's owner. Part of the character of a decorative ornament reflects the character of its owner.	*The portrayal of power from a ruler to their people*

Roland Barth				
SIGN				
SIGNIFIER	**SIGNIFIED**			
	A Malay architectural carving component called a carving panel (Papan Ukir)			*Language*
SIGNIFIER		**SIGNIFIED**		
A Malay architectural decorative component that had a calligraphy and vegetation motif		*The use of nature and calligraphy motifs indicates the importance of Islamic belief in the Malay Culture. Islamic belief prevents the use of living things as a motif. Thus, the nature motif is the best to use. Calligraphy demonstrates the influence of Islam, which uses Arabic letters as its primary script and language of description.*		*Myth*
SIGNIFIER			**SIGNIFIED**	
The use of the component serves as a reminder to its owner of God's creation, which in turn reminds them of God.			*Reminders on the purpose of life*	

Roland Barth's view on semiotics, on the other hand, analyses the aspect of levels in meaning. The first part of semiotic analysis is based on the language aspect, which portrays the basic literal meaning. The second meaning examines the component and its attribute, and the relation between the first meaning and the addition of attributes creates a second level of meaning, which is the Myth. Myth usually portrays the connotation of the 2nd level, which is based on the first level. The process can continue indefinitely based on the interpreter's knowledge. Roland's semiotic analysis is practical in analysing sign meaning on a deeper level.

Table 7. Eco Semiotic analysis on Carving Panel case study

Umberto Eco		
ARCHITECTURAL CODES		
TECHNICAL CODES	**SYNTACTIC CODES**	**SEMANTIC CODES**
A decorative component that is made from wood, carved in half incision for the wall panel.	*A decorative component that is placed on a wall as a decoration. Usually placed beside windows or on top of it.*	**Primary function**
		As a decorative component for building space
		Secondary function
		A decorative component that reminded the viewer of the role of Sahabah (the Prophet Muhammad's companions) in the process of spreading Islamic life throughout the world
		Ideologies
		The use of nature and calligraphy motifs indicates the importance of Islamic belief in the Malay Culture. Islamic belief prohibits the use of living things as motifs. Thus, the nature motif is the best to use. Calligraphy demonstrates the influence of Islam, which uses Arabic letters as its primary language and script.
		Social function
		The use of the decorative component relates to the social status of the building's owner. Therefore, part of the character of a decorative ornament reflects the character of its owner.

Umberto Eco's outlook on semiotic analysis showed a more systematic method based on code system analysis. The code system is divided into three parts: technical, syntactic and semantic. Each code had its specific ways of analysing the case study. Technical code examines the physical aspects of the component, including its technical function. At the same time, syntactic analysis examines the placement of components about one another.

On the other hand, the semantic function had a more detailed analysis as it is further categorised into four groups. The four categories are primary function, secondary function, ideologies and social function. The primary function analyses the first impression function that the component had, usually from the user perspective. The secondary function analyses the other function of the component, which is usually interpreted as the explicit aspect of the component. Ideologies examine the overall aspects of primary and secondary functions and synthesise them into a holistic meaning. Lastly, the social function looks at the component related to its user, which is society. The eco-semantic method encompasses both implicit and explicit aspects of language. This approach is practical in covering all the attributes of the component.

4.3.2 The second level of semiotic analysis

The semiotic method can be further detailed into the second level. The second level involves the detailed attributes of a component. This is considered the second level because, at first glance, the component appears as a whole, but upon closer examination, it has multiple attributes. For example, the component case study is a decorative component at the first semiotic level, which covers the physical aspect (what the viewer first sees) of the component. The first level typically includes the component name, its typology, and the motif it employs. However, upon closer examination, there are many more elements to analyse, such as placement, material, composition, and others. Almost every explicit attribute had an implicit meaning. This also underscores the need for a second-level method for semiotic analysis. The table below combines the semiotic analysis of the attributes of the carving component.

The analysis suggests that a particular attribute is related to a specific group within one of the three semiotic theories. The semiotic theories are matched to the attributes based on their position in the table. The example from the table below illustrates the explicit attributes that relate to Symbol (Jencks), the first layer of meaning and denotation (Roland Barthes), and, lastly, Technical and Syntactic codes (Eco). Although each theory had a slightly different approach, it can still relate to the same sign (Carving Panel). The difference is in its technical definition of why such attributes belong to one group. For the case of explicit attributes in Jencks' semiotics, the symbols are something that is captured by sense, and they are usually physical, which in this case relates more to explicit attributes. The same applies to Eco codes, which are the Technical and syntactic codes. The two codes examine the structural and positioning logic of the component within the entire building system. This analysis is related to the physical (explicit) attributes of the component. Barthes' semiotics looks into the level of meaning. In the case study, the first level is usually perceived early and physically, which again relates more to the explicit attributes of the case study (carving panel).

Table 8. Semiotic theories analysis on Carving component attributes

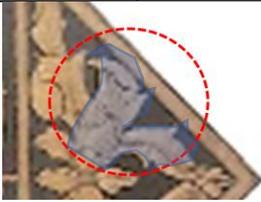| Charles Jencks	Symbol / Representment	
	Thought / Interpretant	
	Referent / Object	
Roland Barthes	First level of meaning (Language) Denotation	
	Second level of meaning (Myth) Connotation	
Umberto Eco	Technical codes	
	Syntactic codes	
	Semantic codes	
Building: Istana Balai Besar	Explicit	Implicit
	Representment	Interpretant
	Technical codes	Semantic codes
	Syntactic codes	
	First level of meaning (Language) Denotation	Second level of meaning (Myth) Connotation
		Symbolic
	Motif	
	Floral (Purple dash)	**Daun sembung**
		Bunga ketam guri
		The use of ketam guri in Malay life has excellent benefits, especially in medicinal use (Ahmad, 2016)

Ukiran Khat Empat Sahabat Nabi	Calligraphy (Yellow dash)	**Islamic Belief** The calligraphy motif would be a connotation of Islamic belief (Ismail bin Said, 2008)
	Element	
	Source / Flower (Light Green dash)	**Punca bunga** Symbolic representation of the origin and start of life. The blooming of a flower represents the glory of God in giving life to its creation (Ahmad, 2016)
	Leaves (Light Blue dash)	**"Tajam tidak menujah lawan" (Sharp without opposing each other)** The flower arrangement towards its end does not point at each other, which symbolically portrays the need for all human beings to avoid conflict and be kind to one another (Ahmad, 2016).
	Calligraphy (Yellow dash)	**Remembrance of Prominent Muslim Leader** The calligraphy is spelling the name of Khulafa al-Rasyidin. So often called, collectively, "the Rashidun", are the spiritual and political successors to the Islamic prophet Muhammad in the Sunni jurisprudence of Islam, refers to the 30-year reign (632–661) of the first four caliphs (successors) following the death of Muhammad, namely: Abu Bakr, Umar, Uthman ibn Affan, and Ali of the Rashidun Caliphate, the first caliphate.
	Placement	
	Wall	-
	Function	Secondary function
	Wall decoration	It serves as a reminder of the sacrifices and hardships of the Prophet's Sahabah in the spread of Islam.
	Carving Technique	
	Silat Leper	
	Half Incision	
	Material	
	Wood	
	Composition	
	Symmetry	
	Object / Referent	
	Semantic code	
	Second level of meaning (Myth)	
	Philosophy	
	The idea of an ornament in its physical state acts as a decorative component to a building. However, as the viewer gains more knowledge about the spiritual value of Malay ornament, the viewer's realisation would be different and on a deeper level. The central motif of the component is the calligraphy of the Prophet Muhammad Sahabah. Thus, the narrative of the component at its root is perhaps to remind the ruler of how to rule, using the best example: the Khulafa al-Rasyidin— often collectively called "the Rashidun".	

Figure 11 presents a summarized framework for applying semiotic analysis to Malay ornamentation. It demonstrates how various semiotic theories—Barthes, Jencks, and especially Umberto Eco—can be systematically applied to interpret both the explicit (physical) and implicit (spiritual) attributes of Malay architectural components. The strength of this framework lies in its alignment with the traditional Malay concept of beauty, which emphasises the duality of zahir (outer) and batin (inner) values. More than just a theoretical exercise, this framework has wider implications across practice, conservation, and education. In architectural design, it can serve as a methodological guide for designers to embed authentic meaning into newly created Malay ornamentation, ensuring that each element is not only aesthetically pleasing but also semantically grounded in cultural values. By applying the semiotic layers—particularly Eco's semantic codes—designers can move beyond surface-level decoration and intentionally craft ornamentation that conveys philosophical, religious, or social narratives, thereby strengthening cultural identity in contemporary architecture.

In heritage conservation, the framework provides a rationale for identifying, preserving, and restoring ornament components based on their symbolic or spiritual significance—not just their physical condition. This ensures that conservation decisions are culturally informed, rather than merely material-driven. From the perspective of public understanding, the study helps reframe Malay ornamentation as a visual language that encodes collective memory and spiritual teachings. By decoding this language, both experts and laypeople can better appreciate the richness and depth of Malay architectural identity. Ultimately, the semiotic framework proposed in this study can act as a strategic design tool—allowing future buildings to carry forward the spirit of Malay culture in ways that are intellectually coherent, spiritually resonant, and visually contextualised. In safeguards traditional meaning but also enables the evolution of new ornamentation that remains true to its cultural roots while engaging wit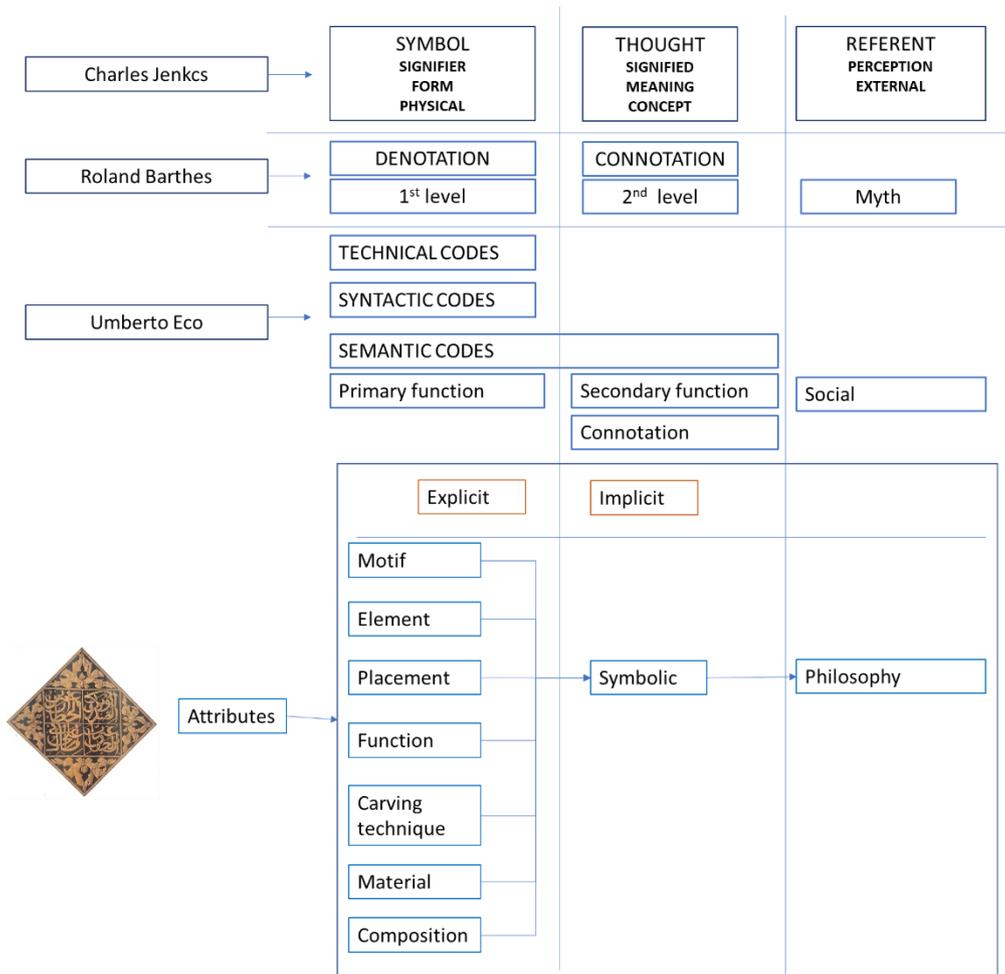h modern architectural expression. Doing so, not only safeguards traditional meaning but also enables the evolution of new ornamentation that remains true to its cultural roots while engaging with modern architectural expression

Figure 11. Summary of semiotic analysis application to Malay Ornamentation. Source: (Author)

5.0 CONCLUSIONS

This study has demonstrated that Malay architectural ornamentation operates as a culturally embedded sign system comprising both explicit (physical) and implicit (spiritual) attributes. By employing a dual-layered semiotic analysis using the frameworks of Barthes, Eco, and Jencks, we revealed how each attribute of a Malay carving component—specifically the *papan ukir* from Istana Balai Besar—encodes layers of meaning beyond its decorative appearance.

The comparative analysis found that Eco's semiotic framework is particularly effective in accommodating the multiple dimensions of architectural ornament, offering a structured means to interpret technical, syntactic, and symbolic codes. Barthes' and Jencks' theories, while insightful, are most effective when used in conjunction with Eco's coding logic, allowing for richer contextual interpretation.

This research contributes a methodological model for analysing traditional ornamentation that may assist not only historians and academics, but also contemporary architects and conservationists who seek to design or restore culturally meaningful architecture. Future research may build on this framework by applying it across a wider set of buildings, or by integrating oral histories and interviews with traditional craftsmen to enrich the interpretive process. By reclaiming the semantic depth of Malay ornamentation, this study underscores the significance of cultural semiotics as a vital tool for architectural theory, design, and heritage discourse in Southeast Asia.

ACKNOWLEDGEMENT

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