

# Dwelling tradition and architecture of Wong Kalang in southern central Java

**Nicolaus Aji Kusuma Rah Utama**

School of Architecture, Planning, and Policy Development, Institut Teknologi Bandung, Indonesia  
Email: [nicolauskruhs@gmail.com](mailto:nicolauskruhs@gmail.com)

**Indah Widiastuti**

School of Architecture, Planning, and Policy Development, Institut Teknologi Bandung, Indonesia  
Email: [indah@ar.itb.ac.id](mailto:indah@ar.itb.ac.id)

**Iwan Sudradjat**

Department of Architecture, Universitas Katolik Parahyangan, Bandung, Indonesia  
Email: [iwansudr@gmail.com](mailto:iwansudr@gmail.com)

## Abstract

The Kalang people, a. k. a. *Wong Kalang*, are an ethnic group residing in several areas on the island of Java. Most Javanese communities have long marginalized them due to their allegedly esoteric belief systems, cultural practices, and traditions. Their endogamic kinship system also leads them to the formation of a closely knitted and exclusive social group.

History noted the Kalang people's special expertise in building craftsmanship and trading. Since the 8<sup>th</sup> century, their name appeared on 38 ancient inscriptions spread across the island of Java. Some of the inscriptions explicitly uttered their name and respective expertise. From the 17<sup>th</sup> to early 20<sup>th</sup> century, numerous Kalang people successfully gained higher economic status, owing to their capacity, adaptability, and resilience in facing contemporary challenges.

The study of Kalang people's architecture and dwelling traditions remains scarce, limited to incomprehensive and fragmented works. This study aims to raise awareness and enrich the knowledge of the livelihood and dwelling culture of the Kalang people and identify the distinctive characteristics of their architecture and dwelling traditions.

This study adopts a qualitative approach, using historical methods and multiple case studies. The researchers chose six Kalang houses built amidst the 17<sup>th</sup> to early 20<sup>th</sup> century in Southern Central Java as the objects of study: three cases in Yogyakarta, one in Adipala–Cilacap, and two in Ambal and Petanahan–Kebumen.

The research findings show that a group of Kalang people whose predecessors have expertise in building craftsmanship tend to build their houses in a more traditional style, using selected timber and masonry construction. Meanwhile, those whose predecessors have expertise in trade tend to build in more intricate and eclectic styles, drawing from architectural precedents from different cultures and periods.

**Keywords:** Wong Kalang, Architectural Style, Dwelling Traditions, South of Central Java, Indonesia

## 1. Introduction

The Kalang people, a.k.a. Wong Kalang, are an ethnic group that has existed in several areas on the Island of Java since the 8<sup>th</sup> century and formed an autonomous cultural unity characterized by a distinctive way of life. But their presence always received little attention due to the Javanese supra-ethnic dominance (Chambert-Loir & Ambary, 1999; Lombard, 1996; Kholiq, 2015; Liani, et al., 2021). For example, a Dutch writing in 1747 only referred to the Kalang people as "another tribe" (Zwaart, 1939, in Suryanto, 2003).

The Kalang people have long been marginalized due to their allegedly esoteric belief systems, cultural practices, and traditions. There were many myths circulating related to the Kalang people, which reinforced the relegation towards them (Kartakusuma, 2000). Some myths depicted the Kalang people as the descendants of unnatural marriages between human and nonhuman, or between humans from the low caste and high caste, or people with low social status (FH UGM & Pontjosutirto, 1973). Nakamura (1983) speculated that the Kalang people were probably the descendants of Sultan Agung's prisoners of war from Bali.

The Kalang people's endogamic kinship system led them to the formation of a closely knitted and exclusive social group. Suryanto (2003) believes that the monopoly of road transportation business by the Kalang people is significantly correlated with their endogamous tendency. The locations of their residence in history also strengthened this claim (Sulistyanto, 1994). Documents from the 18<sup>th</sup> and 19<sup>th</sup> centuries indicated that the settlements of Kalang people in Java tended to be located on two transportation routes, in the North from Pekalongan to Banyuwangi and in the South from Banyumas to Malang. These two route lines ultimately met at the Brantas River, which probably served as their transportation route in the past.

During the 8<sup>th</sup> century, the Kalang people gained recognition for their exceptional expertise in craftsmanship and trading. They were skilled loggers and carpenters, moving from one forest area to another (Hardjodarsono et al., 1987; Wardo, 2011; Aulia, 2021). The Kalang people's existence is mentioned in various inscriptions that link them to woodworking professions (Suryanto, 2003). These inscriptions include *Hariñjing A* (dated 804 AD), *Hariñjing B* (dated 921 AD), and the *Kuburan Candi* inscription found in Tegalsari village Magelang (dated 831 AD) during Rakai Garung's reign (Suryanto, 2003), among 35 other inscriptions. According to Goris (1930, in Sulistyanto, 1994), the term Kalang refers to the position or profession of a carpenter (Sulistyanto, 1994; Suryanto, 2003). Additionally, the text of *Nāgarakrētāgama*, dated 1365 AD, uses the term *Atuha Kalang* to refer to a person entrusted with managing a forest (Handini, 2003; Liani et al., 2021). Various inscriptions found across Java reveal that the Kalang people were always associated with forests, woodwork, and carpentry (Kartakusuma, 2000; Wardo, 2011). The inscriptions' narrative about Wong Kalang emphasizes their essential role and position in Indonesian society at that time (Sulistyanto, 1994; Suryanto, 2003).

Throughout the 17<sup>th</sup> to early 20<sup>th</sup> century, numerous Kalang people demonstrated impressive economic growth due to their adaptability, resilience, and capacity to face contemporary challenges. According to Guillot (1999, in Efendi, 2017), the Kalang people have always exhibited an entrepreneurial spirit commonly found in foreign minorities such as the Chinese,

Khoja, Arabs, and others. In their study of traders and trade in the Kebumen area during the early 20th century, Jennifer and Paul Alexander (1991) noted that the only indigenous ethnic group that could compete with the Chinese in commerce was the Kalang people. The Kalang traders could penetrate trading networks for certain commodities, enabling them to deal directly with European importers without the need for Chinese intermediary traders (Alexander and Alexander, 1991). In social layers based on ethnic identity, the Kalang people occupied a position between the Javanese and the Chinese. The Javanese occupied the highest social layer, while the Chinese, due to their non-native status and differences in religion, were positioned at the bottom of the social layers (Mulyanto, 2008).

The Kalang people are a group known for their adaptability to social changes. Some have become pawnbrokers, buying and selling gold (*Poro*), while others have found triumph as hoteliers and transportation entrepreneurs (Anggraeni et al., 2012; Efendi, 2017). Despite their success, they maintain a frugal and tenacious lifestyle, with many descendants becoming prominent businessmen (Mook, 1972; Amini, 2006; Efendi, 2017). This shift has transformed their socio-cultural, economic, and political values, yet they still embrace the traditional wisdom and values passed down by their ancestors. Overall, the Kalang people lead prosperous and orderly lives.

Indigenous culture refers to the cultural practices and traditions shared by a community that identifies itself as an ethnic group (Sudradjat, 2021). Traditional architecture, which is an important part of indigenous culture, is passed down from one generation to the next based on the customs and traditions of the community. Rapoport (1969) differentiated traditional architecture into two categories: high-culture architecture, which was built for kings, nobles, or members of high social status, and folk-culture architecture, which community members built to meet their own needs. Folk-culture architecture can be further classified into primitive architecture and vernacular architecture. The residences of the Kalang people in the urban areas can be considered high-culture architecture, while those in the rural areas are vernacular architecture. As a Javanese sub-culture that has been in existence since the 8<sup>th</sup> century and continues to thrive with its adaptive capabilities until nowadays, there has been no comprehensive study conducted of the Kalang people's dwelling tradition regarding architecture. This article aims to shed some light on the dwelling tradition and architecture of the Kalang people who live in the Southern part of Central Java, and the research objectives are, to identify their influential factors based on empirical observation of three residences of the Kalang people in the urban area and another three in the rural area.

## 2. Review of Literature

There has been conjecture regarding the etymology of the name "Kalang." Several groups interpret Kalang as a fence or boundary, which originated from the Javanese word "*Kalang*." Throughout Sultan Agung's reign, this community was gathered in one dedicated area, enclosed by sturdy high fences. According to the *Javaansch Nederduitsch Woordenboek* dictionary (Gericke and Roorda, 1847), Kalang is interpreted as "*kejaba*," someone who is positioned outside/separated from others. In Dutch-language dictionaries and documents, several researchers stated that the Kalang people are a segregated society who have unusual or peculiar customs and that they belong to the same family as the Negrito people (Gericke & Roorda, 1847; Crawford, 1852; Rigg, 1862; Meyer, 1877; Raffles, 1978). In other literature

mentioned, they are a Javanese sub-ethnic who were marginalized due to low caste positioning regarding the adoption of the Hindu social system, which recognized four castes. The Kalang people who had menial professions at that time were classified as the lower class and accordingly pushed to reside in and around the forests (Veth, 1907; Ketjen, 1928; Faber, 1983).

In the 18<sup>th</sup> century, the Mataram kingdom had a sizable population of Kalang people. Following the Gijanti Agreement in 1755, the group was divided into two factions. One was placed under the Yogyakarta Sultanate, while the other was settled under the Kasunanan of Surakarta. The spread of the Islamic concept played a significant role in elevating the Kalang people's position in society. Islam viewed all humans as equal and did not recognize a caste system. In the Kasunanan of Surakarta, the Kalang people had specific duties and obligations, including providing building materials such as teak wood gathered from the forest. They were also entrusted with residential constructions for the royal princes and relatives, which significantly enhanced their status. As a result, the Kalang people received formal recognition as *abdi dalem* or royal servants. On August 21, 1808, a commemorative inscription noted that the Kalang people had permission to use any wood except for teak, which was reserved exclusively for the government's use (de Jonge, 1873; Sulistyanto, 1994). The Kalang people's expertise in woodworking has made them a notable group from time to time. G. H. von Faber (1983) stated that the Kalang group built many buildings on the island of Java, including the king's palace, temples, and other profane buildings within the royal establishment (Faber, 1983).

The study of the Kalang people's architecture remains scarce, limited only to income-prehensive and fragmented works. The historical development of their settlements has not been accurately and comprehensively documented (Mulyanto, 2008). Numerous studies have been conducted on Wong Kalang, with the majority of these studies being carried out outside of the architecture realm. These studies encompass a wide range of topics, including research focused on the history and heritage of the Kalang people in specific regions conducted by Handini (2003), Suryanto (2003), Muslichin (2011), Wanto (2011), and Liani, et al. (2021); anthropological studies conducted by FH UGM & Pontjosutirto (1973), and Sulistyanto (1994); while discussions from an ethnographic perspective conducted by Lelono (1989). However, studies encompassing the Kalang community within the discipline of architecture have predominantly focused on the physical characteristics of their building architecture, as conducted by Hidayati (2000), Santoso (2012), and Widianingtias et al. (2020). Meanwhile, Setiadi (2022) studied the architecture of the Kalang people in Yogyakarta, focusing on the dynamics of the sacred-profane forms and meanings. Notably, the previous research has not delved into the domain of dwelling traditions, which can be a beneficial complement to the knowledge about the livelihood of the Kalang people.

Dwelling traditions are closely intertwined with the setting and environment of the community in which they are located. According to Norberg-Schulz (1985), the concept of dwellings can be defined in three terms: firstly, dwelling involves meeting with others to exchange products, ideas, and emotions to experience life's diverse possibilities; secondly, living entails agreeing with others, including common values within a group; and thirdly, living entails uniting with a sense of belonging to one's common ground. Rapoport (1969) asserts

that building a house is a cultural phenomenon, and the shape of a house is not solely the result of physical forces or other single factors but rather a consequence of the entire socio-cultural range.

Oliver (1997) identifies 20 cultural characteristics and attributes that influence vernacular architecture, including domestic routines, economics, family types and cycles, food, gender roles, houses, kinship and residency, language, meaning, nomadism, play, politics, religion and belief, ritual and ceremony, social structure, spatial organization, symbolism, tradition and transmission, values and norms, and westernization and cultural interaction. Dwelling tradition has been discussed by scholars in previous research related to the realm of vernacular architecture. For instance, Dutta et al. (2022) emphasized the significance of preserving and honoring the unique Kath-Khuni architecture of the Himachal Pradesh region as a cultural and sustainable heritage. They also suggest that this vernacular architectural style can offer valuable insights for sustainable and climate-responsive construction practices in other regions that face similar environmental challenges. Sahabuddin and Hildayanti (2023) also explore the deep interconnections between culture, belief systems, and architecture among the Kajang people. Their research sheds light on the spiritual and cultural significance of the built environment and provides insights into the intricate relationship between cosmology and the physical spaces they create. Other than that, Vongvilay et al. (2015) sought to explore the cultural and physical characteristics of Lao vernacular dwellings and their significance in the context of various ethnic groups. The study delved into the unique features of these dwellings and their importance in shaping the cultural identity. The findings of this research shed light on the intricate relationship between architecture, culture, and identity in Lao vernacular dwellings. Therefore, to gain insight into the dwelling traditions of the Kalang community, it is essential to examine the non-physical and physical realms of their socio-culture.

### **3. Research Methodology**

The main objective of this research is to substantiate the existence of the Kalang people by studying their dwelling culture and architecture and identifying the significant factors that influence and shape them. The research covers physical and non-physical aspects of their livelihood. Historical and synchronic analysis will be employed to review the simultaneous events that have impacted changes occurring at a particular time. The research commenced by conducting a thorough literature search related to the Kalang community, encompassing both historical aspects and architectural dimensions. Data was gathered in the form of notes, journals, and manuscripts, as well as a list of potential informants for use in the next stage of this research.

Following the initial literature review, an interview was conducted with members of the Kalang family and experts related to Kalang culture to collect insights into the non-physical aspects that complement architectural features and to guide field observations. An in-depth interview was arranged as a method of data extraction. Engaging with informants from the Kalang community posed a unique challenge due to their historical stigmatization, and the researchers required a unique approach to obtain reliable information and valuable data, including about the historical and kinship aspects of the Kalang community. Six Kalang houses built amidst the 17<sup>th</sup> to early 20<sup>th</sup> century were selected based on the kinship attributes

explained by informants as the objects of study: three cases in Yogyakarta, one in Adipala, one in Ambal, and one in Petanahan.

Once the essential information about the research site is collected, the subsequent phase entails methodical field observations. This process yields inclusive architectural documentation, represented through photographs that expose the overhead, middle, and base planes, along with decorative elements applied in several parts of the building. The fulfillment of research objectives rested on the synchronic analysis of both physical and non-physical data. Subsequently, the findings are presented in a narrative and descriptive manner. Three cases in Kotagede Yogyakarta were purposefully chosen because closeness of kinship, one of the cases was formerly the residence of the well-known Kalang family, namely Prawiro Suwarno, which serves as representative case studies to delve into the architectural and cultural dimensions of the Kalang community.

#### 4. Research Findings: Field Survey Data of The Six Kalang Houses

Architecture is a cultural product, and hence, it must be measured as a system of culture and symbols through which humans identify their environment (Barthes, 1967; Moustafa, 1988). The dwelling and architecture traditions of the Kalang people cannot be comprehended outside their cultural milieu, as these traditions are deeply ingrained in their beliefs and socio-cultural systems inherited from their predecessors. The residential architecture of Kalang people in different locations is always easy to recognize because it has a distinctive style (Mook, 1972; Widianingtias et al., 2020), notably the hybrid between the Javanese traditional architectural style, the Indische architectural style, and many others (R. Hidayati, 2000), and also because of its striking difference in terms of scale, aesthetical appearance, and socio-economic status.

##### Case Study 1: Sekar Kedhaton and Ansor Silver



**Figure 1:** Two *Omah* Kalang formerly owned by Prawiro Suwarno in Kotagede, Yogyakarta.  
**Source:** Field survey, June 2022

The first buildings observed in this study are known as Sekar Kedhaton and Ansor Silver, located on Tegal Gendu Street in Kotagede - Yogyakarta, formerly owned by a Kalang businessman who was very successful in managing a pawnshop and trading business (Figure 1). These two buildings were built around 1800 on a large plot of land compared to the surrounding area and has undergone an addition in 1939. Prawiro Suwarno, the third generation of Kalang in Kotagede, consistently maintained the traditions inherited from his predecessors. His father, Mulyo Suwarno, and grandfather, Mertowongso, were traders who were very skillful in managing finances (Efendi, 2017). Prawiro Suwarno still conducts religious rituals performed by his ancestors and still practices endogamy<sup>1</sup>. With his tenacity and persistence, he obtained trade monopoly rights from the palace and the Dutch East Indies government (Efendi, 2017).



**Figure 2:** The use of imported stained glass and local teak wood in the joglo building.  
Source: Field survey, June 2022.

The architectural style of these buildings is very distinctive, showing a mixture of European, Chinese, and Javanese influences, strictly contrasted with the surrounding setting. The pavilion has the form of a closed Joglo, complete with a canopy full of carvings with geometric, floral, alphabetical, and numerical patterns. Originally, there were three building masses visible from the facade<sup>2</sup>, but the middle building was then demolished to be converted into a parking area. The layout of the buildings follows the traditional Javanese spatial patterns. The buildings use reinforced concrete construction technology, which was by the 1800s, and masonry technology for the surrounding walls. Other building components showed a mixture of imported and local materials. For example, stained glass from Europe was given a local teakwood frame to form unique window components. (Figure 2). The buildings were heavily decorated with ornamental elements in the form of various mythological animals to represent freedom of thought and broaden horizons towards new things.

<sup>1</sup> Interview with T. Mulyatno, grandson of Prawiro Suwarno.

<sup>2</sup> Interview with N. Y. Santosa, Noerijah's great-granddaughter.

### Case Study 2: B.H Noerijah Residence

B. H Noerijah, the first born daughter of Prawiro Suwarno, owns the second building observed. This residence was built in 1913 and is also located on Tegal Gendu Street, Kotagede, Yogyakarta (Figure 3). Along Tegal Gendu Street, Prawiro Suwarno and his seven children own eight houses. B.H. Noerijah is not just continuing her father's profession as the owner of monopoly rights in gold trading but also has monopoly rights in diamond trading at national and global levels<sup>3</sup>. Her success story as holder of the monopoly rights also indirectly uplifted her social circle. If her father, Prawiro Suwarno, was a close friend of Sultan Hamengku Buwono VIII, B. H. Noerijah was close not only to Sultan Hamengku Buwono IX but also to the colonial rulers. This closeness did not make B. H. Noerijah compromise her identity, loyalty, and role in Indonesian independence. According to her great granddaughter, N. Y. Santosa, B. H. Noerijah helped Indonesian freedom fighters in many aspects, including providing them with logistics; this was done with camouflage in her trading transaction room.



**Figure 3:** Omah Kalang, formerly owned by B. H. Noerijah in Kotagede, Yogyakarta.

**Source:** Field Survey, June 2022.



**Figure 4:** The Joglo surrounded by masonry walls.

**Source:** Field Survey, June 2022.

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<sup>3</sup> Interview with N. Y. Santosa, Noerijah's great-granddaughter.



B.H. Noerijah's house has a hybrid architectural style, a mixture of several building styles from Belgium, Arab, China, and Javanese traditions. Her extensive connections with large merchants from these countries influenced the choices of building technology and materials used for her house, such as cast-iron building components imported from abroad. The ornamentation details of this house also showed an eclectic taste, as exemplified by the use of dormers and *geveltoppen* on the roof, the formation of a dome in the worship area, a canopy with stained glass at several entrances, *tutup keong* equipped with *rete-rete* on the façade and *regol*, as well as anti-earthquake technology. Surprisingly, all these components were applied very neatly and carefully, complementary to the Javanese traditional style as its main theme (Figure 4), manifesting the interconnectivity and adaptability of the Kalang people to the pervasive contexts.

### **Case Study 3: Ndalem Proyodranan**

The third building observed is called *Ndalem Proyodranan*, built in 1857 and owned by Proyodrono whose predecessors for many generations had controlled the batik trade and transportation services (Figure 5). Located on Mondorakan Street in Kotagede – Yogyakarta not far from Prawiro Suwarno's house, this traditional Javanese style house adopted foreign building technologies such as cast iron and stained glass, with very intricate building components and ornamentations, but managed to use local materials for many purposes, such as teakwood for the main columns, even Limasan roof equipped with Kuncungan. The building ornaments were purposefully developed to match the owner's profession, featuring the shape of wheels, anchors, boats, and wind direction indicators. The building is oriented towards mountains and sea, which is evidently expressed in the stained glass of the windows. The owner deliberately expresses his identity and status through the architectural appearance of this house.



**Figure 5:** Omah Kalang, formerly owned by Proyodrono in Kotagede, Yogyakarta.

**Source:** Field Survey, June 2022.

### **Case Study 4: Moeljodiwarno Residence.**

The fourth building observed in Adipala was founded in 1889 and owned by the Moeljodiwarno family (Figure 6). The person who first built this house worked in forest management, especially teak, mahogany, and bamboo forests. As time went by, their descendants were assigned to more important positions, such as managers and policymakers in the domestic forestry system. Meanwhile, other family members worked as farmers and

traders<sup>4</sup>. The house is located on the main road, close to the central market of this area. The building has a traditional Javanese architectural style, using wood as the dominant material and masonry construction. This house consisted of 4 building masses: the first Joglo building functions as a *Pendapa*, the second joglo building as the *Dalem*, the third building mass with a *Srotongan* roof as the *Gandhok*, and the fourth building mass with *Panggung Pe* roof as the *Emper*. The house in Adipala has a wider open area at the front and the side of the building. The open area at the front part functions as a circulation space and for the drying process of field products. It also functions as a space to hold events or rituals whenever needed. The residents in Adipala still carry the task of Kalang Obong, whose responsibility is cleaning the forest (*Babat Alas*).



**Figure 6:** Omah Kalang owned by Moeljodiwarno family in Adipala, Cilacap.

**Source:** Field survey, February 2023.

The main materials of the House in Adipala are teak wood and bamboo. *Soko Guru* in the Joglo building is made of solid wood without carving and provided with simple *umpak* masonry. The outer and inner walls of building masses 1 and 2 (*pendopo* and *dalem*) are made of teak wood without carvings and use geometric ornamentation combined with glass material as part of an effort to utilize natural lighting. *Tinder* walls are only used in the third building mass, which has a *Srotongan* roof. Meanwhile, the space dividers in the fourth building mass are made of woven bamboo with a *Panggung Pe* roof. For the entire roof frame of this building, teak wood is used as the main structure and battens, while the rafters use bamboo, which is split to size. The outer roof covering uses zinc sheets, while the ceiling covering uses woven bamboo chambers coated with a layer of *tinder* as a natural dye and insect repellent. The house floor is set 3 steps (approximately 30cm) higher from the ground.

#### **Case Study 5: Brodjoosemito Residence**

The fifth building observed was built in 1910<sup>5</sup>, owned by the Brodjoosemito family, located in Petanahan – Kebumen on the main road close to the market (Figure 7). The family members who first lived in this house worked as forest managers and woodcutters. Until now, their descendants have the same livelihood, namely as managers of state-owned forests and traders of agricultural equipment. The house in Petanahan has a Javanese traditional style,

<sup>4</sup> Interview with S. Sugondo, Kalang family who owned the house in Adipala.

<sup>5</sup> Interview with S. Brodjoosemito, Kalang family who owned the house in Petanahan.

made of mixed construction of wood and masonry. There are 4 building masses in this housing complex: the first joglo building functions as a pavilion, the second joglo building functions as a the *Dalem* complete with *Senthong*, the third building mass with a *Srotongan* roof functions as *Gandhok Kiwa*, and the fourth building mass with a *Srotongan* roof functions as *Gandhok Tengen*.



**Figure 7:** Omah Kalang owned by Brodjosemito family in Petanahan, Kebumen.  
**Source:** Field survey, February 2023.

The open area of this house is quite large. There is a boulevard complete with a doorway or entrance, which serves as a place for passengers to disembark from riding animals, horse-drawn carriages, or motorized vehicles. The joglo building in the front still functions for artistic activities or simply for homeowners to gather with residents. This pavilion uses teak wood throughout. The *soko guru* has a few carvings with tendril motifs, while the *usuk* and intercropping have no carvings. There is no cover or space divider on this pavilion; the roof covering material uses clay tiles. In the second joglo building, which functions as a *Dalem*, the pillars and roof frame are made of teak wood decorated with geometric ornaments. Different from the Kalang house in Adipala, in this house, there is a *pringgitan* between the pavilion and the *Dalem*. The interior uses *tinder* walls covering all four sides, but the *Senthong Tengah* section uses *Gebyok* with complicated carvings. The third and fourth building masses with *Srotongan*-shaped roofs use walls with *tinder* and are embedded with some geometric patterned ceramics to cover the facade. The house floor is set 3 steps (approximately 30cm) higher from the ground. Additional steps that lead to the *dalem* and *senthong*, which have higher floor elevation. The house in Petanahan totally uses local materials.

#### **Case Study 6: Manten Residence**

The sixth building observed is located in Ambal–Kebumen, built around the mid-1700s to the early 1860s and owned by the Manten family. The house is located quite far from the main road and surrounded by forestry belonging to the Perum Perhutani (Figure 8). The occupants of this building are the sixth generation of the Kalang family, who earn a living by planning and constructing buildings made of wood and stone<sup>6</sup>. This house has a traditional Javanese

<sup>6</sup> Interview with S. Manten, Kalang family who owned the house in Ambal.

architectural style consisting of two structures. The first Joglo building was built around the mid-1700s, made of teak wood, and functions as a place for ceremonies and daily rituals. The second structure was built in the early 1860s and made of mixed wall materials (stone, clay, and tin).



**Figure 8:** Omah Kalang owned by Manteh family in Ambal, Kebumen.

**Source:** Field survey, February 2023

The first building is called *Joglo Kalang*, which is enclosed by decorated panels (*gebyok*). There are no carvings on teakwood in the interior of the building. The only decorative element is only visible in the form of colored glass material incorporated into decorated panels, which are quite noticeable when exposed to light from the outside. The second structure is a building made from a mixture of stone, clay, and *tinder*, covered with a *Limasan* roof form, enclosed by 30cm thick walls that have an elongated profile on the top. Ornamentation is widely used in this building; the ceiling was made of patterned molded tin, and door and window frames are ornated with various geometric compositions made of large pieces of wood, including *ilat-ilatan* on the bottom of the windows and *Prada*-based dye finish, which characterized all houses owned by the upper class of the Kalang group. An overhang on the second building leads towards the *dalem* and *senthong*. The house floor is set three steps (approximately 30cm) higher from the ground. Additional steps that lead to the Joglo Kalang are approximately 60 cm in height.

#### 4. Analysis and Discussion

The first three case studies represent the typical residence of Kalang people who live in the urban area and are owned by a wealthy and successful public figure who runs a profitable business, granted a trade monopoly right, and established a very close relationship with the high officials in power. Their social position and wealth allowed them to build a lavish house so that they could display their success and earn public recognition, and at the same time declare that their aesthetic taste and preference in architecture surpassed the canon of Javanese architecture, as proven by the adoption of various foreign design elements in an eclectic manner. Table 1 shows the comparative cultural characteristics and attributes of the three case studies located in the urban area.

**Table 1:** Comparative cultural characteristics and attributes of three case studies located in the urban area

No.	Attributes	Cultural Characteristics		
		Case Study 1	Case Study 2	Case Study 3
1	Kinship and Lineage	Close kinship, endogamous, influenced tradition and transmission	Close kinship, endogamous, influenced tradition and transmission	Close kinship, endogamous, influenced tradition and transmission
2	Tradition and Transmission	Knowledge and skills transmission by lineage (no gender reference). The knowledge passed down takes the form of skills in the fields of gold trading, pawnshop, banking, and financial management, influence building features.	Knowledge and skills transmission by lineage (no gender reference). The knowledge passed down takes the form of skills in the fields of gold trading and diamond trading, influenced space treatment and building features.	Knowledge and skills transmission by lineage (no gender reference). The knowledge passed down takes the form of skills in the fields of batik trade and transportation services, influenced ornaments and decorative elements.
3	Ritual and Ceremony	Adhere to rituals and ceremonies (funeral ceremonies: <i>Kalang Obong</i> , birth and grow ceremonies: <i>Tedhak siten</i> , wedding ceremonies: <i>Siraman</i> , pouring a jug of specific flowers and fragrance water on the bride and groom) which affect the size of the space and height of the ceiling.	Adhere to rituals and ceremonies (funeral ceremonies: <i>Kalang Obong</i> , birth and grow ceremonies: <i>Tedhak siten</i> , wedding ceremonies: <i>Siraman</i> , pouring a jug of specific flowers and fragrance water on the bride and groom) which affect the size of the space and height of the ceiling.	Adhere to rituals and ceremonies (funeral ceremonies: <i>Kalang Obong</i> , birth and grow ceremonies: <i>Tedhak siten</i> , wedding ceremonies: <i>Siraman</i> , pouring a jug of specific flowers and fragrance water on the bride and groom) which affect the size of the space and height of the ceiling.
4	Westernization and Cultural Interaction	Highly interacted with the Western region (Europe) influenced	Highly interacted with the Western region (Europe) influenced	Interaction with the Western region (Europe) influenced architectural details

		architectural details and styles. Close cultural interaction with Javanese influenced architectural layout, being in the midst of society.	architectural details and styles. Close cultural interaction with Javanese influenced architectural layout, being in the midst of society and giving aid to local mercenaries influenced spatial organization and circulation.	and styles. Close cultural interaction with Javanese influenced architectural layout and structures, being in the midst of society.
5	Social Status	Have a high social status among other Kalang families (with a special title called <i>Bekele</i> ) and society, influenced façade and ornamentations.	Have a high social status among other Kalang families and society, influenced façade and ornamentations.	Have a high social status among other Kalang families and society, influenced façade and ornamentations.
6	Economic Status	Have a high economic status among other Kalang families and society, influenced material selections, structures, and architectural features.	Have a high economic status among other Kalang families and society, influenced material selections, structures, and architectural features.	Have a high economic status among other Kalang families and society, influenced material selections, structures, and architectural features.
7	Political Status	Has a close relationship with local ruler (Sultan HB VIII personally), influenced social status.	Has a close relationship with local ruler (Sultan HB IX personally), influenced social status.	Has a close relationship with the local ruler (government), influenced social status.
8	Geographical Attributes	Urban	Urban	Urban

The subsequent three case studies represent the typical residence of Kalang people who live in rural areas, which are closely related to the timber industrial sector. They are considered an exclusive group because they are privileged by possessing forest management rights and benefits so that they can pass on the knowledge of carpentry and building skills (building manuscripts) to their descendants from generation to generation. Table 2 shows the comparative cultural characteristics and attributes of the three case studies located in the rural area.

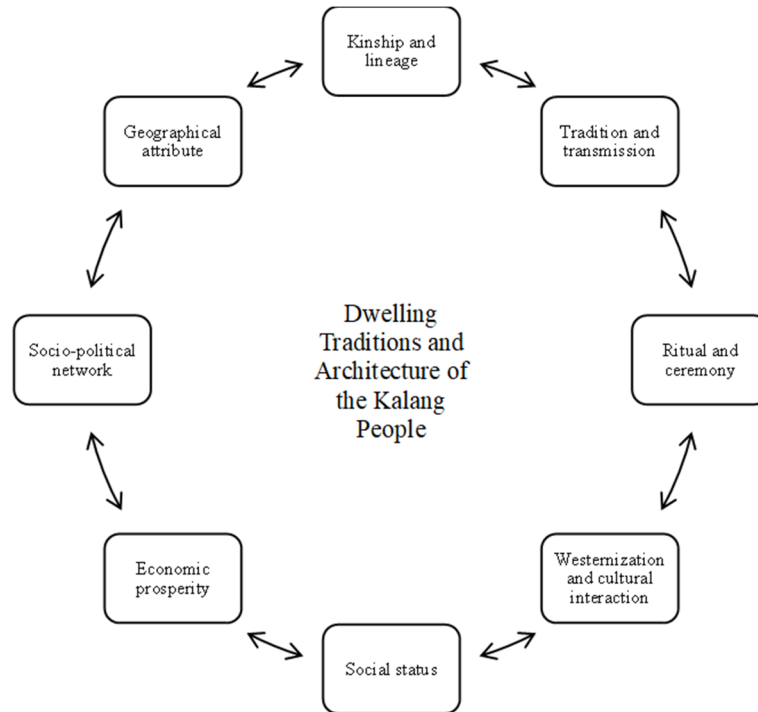
**Table 2:** Comparative cultural characteristics and attributes of three case studies located in the rural area

No.	Attributes	Cultural Characteristics		
		Case Study 4	Case Study 5	Case Study 6
1	Kinship and Lineage	Close kinship, endogamous, influenced tradition and transmission	Close kinship, endogamous, influenced tradition and transmission	Close kinship, endogamous, influenced tradition and transmission
2	Tradition and Transmission	Knowledge and skills transmission by lineage (no gender reference). The knowledge passed down takes the form of skills in the fields of forestry management and logging, influenced building features.	Knowledge and skills transmission by lineage (no gender reference). The knowledge passed down takes the form of skills in the fields of forestry management and logging, influenced building features.	Knowledge and skills transmission by lineage (no gender reference). The knowledge passed down takes the form of skills in the fields of processing wood, building houses made of wood, and building temples and palaces, influenced building features.
3	Ritual and Ceremony	Adhere to rituals and ceremonies (funeral ceremonies: Kalang <i>Obong</i> , birth and grow ceremonies: <i>Tedhak siten</i> , wedding ceremonies: <i>Rewang</i> , meetings to help prepare for celebrations held once a month in the	Adhere to rituals and ceremonies (funeral ceremonies: Kalang <i>Obong</i> , birth and grow ceremonies: <i>Tedhak siten</i> , tree cutting rituals, and building rituals, which affect the size of the space of the yard.	Adhere to rituals and ceremonies (funeral ceremonies: Kalang <i>Obong</i> , birth and grow ceremonies: <i>Tedhak siten</i> , building rituals: which affect the size of the space of the yard.

		extended family. <i>Siraman</i> , pours a jug of specific flowers and fragrance water on the bride and groom) which affects the size of the space and height of the ceiling.		
4	Westernization and Cultural Interaction	No westernization, close cultural interaction with Javanese, influenced dwelling typology.	No westernization, close cultural interaction with Javanese, influenced dwelling typology.	No westernization, close cultural interaction with Javanese, influenced dwelling typology.
5	Social Status	Have a high social status among other Kalang families and society, with a special title called <i>Tuan Guru</i> . Social status influenced façade and ornamentations.	Have a mid social status among other Kalang families and society, with a special title called <i>Nganten Nem</i> (one of the honorary titles in the kinship). Social status influenced façade and ornamentations.	Have a high social status among others Kalang family and among society, with a special title called <i>Nganten Kakung</i> (one of the honorary titles in the kinship). Social status influenced façade and ornamentations.
6	Economic Status	Have a high economic status among other Kalang families and society, influenced spatial extent.	Have a high economic status among other Kalang families and society, influenced spatial extent.	Have a mid economic status among other Kalang families and high among society, influenced spatial extent.
7	Political Status	Has a close relationship with local ruler (government), influenced material selections.	Has a close relationship with local ruler (government), influenced material selections.	Has a close relationship with local ruler (government), influenced material selections.
8	Geographical Attributes	Rural	Rural	Rural



From these limited case studies, we can tentatively infer that the dwelling tradition and architecture of the Kalang people are particularly affected by many interrelated factors, including the kinship and lineage of the owner, traditions and transmission among generations, ritual and ceremony, westernization and cultural interaction, social status, the economic prosperity of the family, the socio-political network, and the geographical attributes (Figure 9).



**Figure 9:** Interrelated factors that affect the dwelling tradition and architecture of the Kalang People.

### 5. Conclusion

In the first three urban case studies, the transmission of knowledge encompasses fields such as gold trading, diamond trading, and financial management, significantly influencing the architectural features, including building styles and decorations. In contrary, the rural case studies focused on forestry management, logging, wood processing, and temple construction, which, in turn, impact their architectural elements. A common element in all six case studies is the presence of close kinship and endogamous practices. These familial bonds hold profound significance and are deeply ingrained in their cultural fabric. They play a pivotal role in shaping tradition and knowledge transmission within each community. This shared kinship lays the foundation for a strong sense of identity and continuity.

The adherence to rituals and ceremonies is a shared attribute across all case studies. These rituals encompass various life events, including funeral ceremonies, birth and growth ceremonies, wedding ceremonies, and building rituals. These rituals leave an indelible mark on architectural aspects, influencing the size of spaces and the height of ceilings.

The first three urban case studies have experienced significant westernization, notably from Europe, leading to influences on architectural details and styles. Concurrently, their close interactions with the Javanese community have shaped the layout and structure of their built environment. In contrast, the rural case studies display a deliberate avoidance of westernization and maintain close cultural interactions with the Javanese, significantly influencing dwelling typology.

Social hierarchies exhibit variations among the case studies. Case Study 1, in particular, holds a high social status within the Kalang community, distinguished by the title of "Bekele." This elevated status influences the facade and ornamentation of their settlements. In comparison, Case Studies 4 and 6 hold high social positions, denoted by titles "Tuan Guru" and "Nganten Kakung," respectively, which similarly impact architectural aesthetics and material choices. Case Studies 2 and 3, while having high social standing, do not possess specific titles, although their social status influences their architectural elements. Meanwhile, Case Study 5 holds a mid-level social position within the Kalang community.

Economic prosperity is a common theme among all case studies, shaping various aspects of their architectural and cultural characteristics. High financial status prevails in Cases 1, 2, 3, 4, and 6. The influence of this wealth is evident in material selections, structural choices, and architectural features. In Case 5, the community maintains a mid-level economic status among other Kalang families but maintains a relatively higher status within society.

The political influence is prevalent across the case studies. Case Studies 1, 2, and 3 maintain close relationships with local rulers or governments, which significantly impact their social status. Cases 4, 5, and 6 also hold strong ties with local rulers, which affect material selections in the construction of their settlements.

Geographically, all case studies are located in either urban or rural areas. The first three case studies are positioned in urban environments, characterized by more extensive cultural interactions and architectural diversity. Meanwhile, the latter three are located in rural areas, reflecting a more traditional and secluded lifestyle.

These case studies exemplify the intricate interplay between cultural attributes, kinship, tradition, and external influences, which converge to shape their distinct architectural and cultural characteristics. This comprehensive understanding highlights the complexity of culture and its profound impact on the built environment, which shapes their dwelling traditions.

Further research in this field holds immense potential in reinforcing understanding of the intricate interplay between Kalang settlement cultural attributes mentioned above. The synchronic analysis, as demonstrated in these case studies, offers a compelling framework for investigating the complex dynamics that shape the diversity of Kalang dwelling traditions.

By examining various communities, urban or rural, transmit knowledge and traditions within their close-knit kinship structures, and unearth rich insights for further research. Presented inquiries are able to reveal the adaptive qualities of Kalang cultural characteristics, how it perseveres amid external influences, and how it resonates through architectural alternatives. In particular, examining the resilience of these cultural practices and kinship bonds within differing socio-economic and political contexts could shed light on the roots of cultural identity and heritage preservation. Required ethical research practices, encompassing informed consent, confidentiality, and respect for cultural values, to conduct studies in a culturally sensitive and responsible manner.

In conclusion, further research in this field has the potential to unravel the intricate layers of architectural diversity and the influence of culture, kinship, dwelling tradition, and architecture of Wong Kalang. However, the success of these endeavors hinges on maintaining cultural sensitivity, extending research to *terra incognita* societies, collaborating with local experts, and adhering to ethical research practices.

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