

Analisis Pengakuan dan Apresiasi Kompetensi Lulusan Meyga Fitri Handayani
Nasution Sesuai Fokus Deferensiasi Misi Program Studi Doktor Ilmu Arsitektur dan
Perkotaan Fakultas Teknik Universitas Sumatera Utara (FT USU)

Publikasi Karya Tulis Lulusan atas Nama Meyga Fitri Handayani Nasution yang Berjudul "*The Influence of Local Knowledge on the Continuity of Vernacular Dwellings in Hamparan Perak Sub-District*" layak untuk mendapatkan pengakuan dan apresiasi dalam Program Studi Doktor Ilmu Arsitektur dan Perkotaan Fakultas Teknik Universitas Sumatera Utara (FT USU)

Misi Program Studi:

- **Misi 1:** Program ini bertujuan untuk menyelenggarakan pendidikan berkualitas tinggi yang menghasilkan lulusan yang mampu bersaing di tingkat internasional. Penelitian Meyga Fitri Handayani Nasution tentang pengaruh pengetahuan lokal terhadap kelangsungan rumah vernacular di Kecamatan Hamparan Perak merupakan studi yang sangat relevan dengan konteks global mengenai keberlanjutan, konservasi, dan pelestarian budaya. Karya ini berkontribusi pada pengembangan pengetahuan arsitektur yang dapat diterapkan di berbagai negara dengan nilai budaya yang kaya, yang sejalan dengan misi untuk menghasilkan karya penelitian yang dapat bersaing di tingkat internasional.
- **Misi 2:** Program ini berfokus untuk menghasilkan lulusan yang teruji sebagai pemecah masalah di masyarakat dengan menggunakan penalaran ilmiah berbasis pada ilmu arsitektur dan perkotaan. Penelitian ini secara langsung mengaddress masalah lokal yang berkaitan dengan kelangsungan hidup bangunan vernacular yang telah menjadi bagian dari budaya masyarakat. Dengan demikian, karya ini berkontribusi untuk memecahkan masalah di bidang konservasi budaya dan pembangunan yang berkelanjutan dalam konteks perkotaan.
- **Misi 3:** Penelitian ini memasuki ranah inovasi dalam bidang perencanaan dan desain yang berkelanjutan, yang merupakan bidang penting dalam konteks Revolusi Industri 4.0 dan Society 5.0. Meyga Fitri Handayani Nasution membahas bagaimana pengetahuan lokal dapat dimanfaatkan dalam desain bangunan yang berkelanjutan, memberi wawasan baru yang relevan dengan perkembangan global terkait pembangunan berbasis nilai lokal dan keberlanjutan.
- **Misi 4:** Fokus penelitian ini tidak hanya bersifat akademik, tetapi juga memiliki dampak sosial yang nyata bagi masyarakat lokal. Dengan memperhatikan kelangsungan rumah vernacular, penelitian ini berpotensi meningkatkan kualitas hidup masyarakat dengan melestarikan warisan budaya serta memberikan solusi praktis untuk pembangunan yang ramah lingkungan.
- **Misi 5:** Publikasi karya ini dalam jurnal *Civil Engineering and Architecture* (terindeks Q2), yang diakui secara internasional, menunjukkan kualitas tinggi dari penelitian yang dilakukan. Ini juga memperkuat hubungan Program Studi Doktor Ilmu Arsitektur dan Perkotaan FT USU dengan kolaborasi internasional dan menunjukkan potensi besar untuk kemitraan akademik di masa depan.

Program Learning Outcomes (PLOs):

Penelitian ini sejalan dengan beberapa **PLO** program studi, antara lain:

- **PLO 1:** Pengetahuan dan pemahaman tentang pelestarian budaya dan arsitektur vernacular dalam konteks perkotaan, yang menjadi fokus utama dalam karya ini.
- **PLO 2:** Metode penelitian dan penerapannya untuk memecahkan masalah dunia nyata, sebagaimana yang diterapkan Meyga Fitri Handayani Nasution dengan menganalisis dampak pengetahuan lokal terhadap kelangsungan rumah vernacular.
- **PLO 4:** Kemampuan untuk menilai secara kritis dan mengembangkan teori-teori baru dalam arsitektur yang berkelanjutan dan relevansi budaya.

Standar Global dan Pengakuan:

Publikasi karya ini dalam jurnal Q2 menegaskan pengakuan internasional terhadap penelitian ini, yang menunjukkan dampak besar dalam bidang arsitektur dan perencanaan kota. Karya ini sejalan dengan standar internasional dan dapat dijadikan acuan untuk penelitian di bidang pelestarian dan keberlanjutan arsitektur.

Karya tulis Meyga Fitri Handayani Nasution berjudul *"The Influence of Local Knowledge on the Continuity of Vernacular Dwellings in Hamparan Perak Sub-District"* layak untuk mendapatkan pengakuan dan apresiasi dalam Program Studi Doktor Ilmu Arsitektur dan Perkotaan Fakultas Teknik Universitas Sumatera Utara (FT USU). Penelitian ini tidak hanya berkontribusi pada pengembangan ilmu arsitektur dan perkotaan, tetapi juga menawarkan solusi praktis yang relevan dengan tantangan global di bidang pelestarian budaya dan pembangunan berkelanjutan. Publikasi ini di jurnal Q2 memperkuat posisi penelitian ini sebagai karya yang berkualitas tinggi dan memiliki dampak yang signifikan, baik di tingkat nasional maupun internasional.

The Influence of Local Knowledge on the Continuity of Vernacular Dwellings in Hamparan Perak Sub-District

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Abstract This qualitative study aims to obtain information related to local knowledge of the Malay community and its influence on the continuity of vernacular architecture. This study used five Deli Malay vernacular dwellings as study objects, and they were selected based on several criteria. Collecting data was conducted by means of observation, semi-structured interviews, and visual documentation. Some householders were chosen as respondents to find out the depth of knowledge related to Malay vernacular architecture. The continuity identification uses spatial variables and the physical form of vernacular dwellings. The identification results aimed to analyze the extent, to which local knowledge influences the sustainability of Malay vernacular dwellings. This study found that the householders quality of local knowledge was decreasing by generation hereditary. Currently, the continuity of Malay vernacular housing occurs due to the desire of homeowners to maintain their identity as an ethnicity, and the memories left by their parents who built the dwellings. Following up on this study's findings, it is necessary to preserve Deli Malay vernacular architecture, bearing in mind that its existence would be increasingly displaced by the times.

Keywords Continuity, Local Knowledge, Malay Vernacular

something unique to a community [1], such as Malay ethnic community who is living in Hamparan Perak Sub-District. Local knowledge is a knowledge that reflects the ability of the community [2] to build their dwelling place. Initially, the Malay vernacular dwellings were built by taking into account the natural conditions and the environment adjacent to the river. The stage house concept is a point characteristic of the Malay vernacular dwellings in Hamparan Perak. Through observation, learning [3], and experience as an effort to adapt [1], these settlements grow along the banks of river Sei Belawan.

The number of these studies related to local knowledge more concerned with environmental resources, agriculture [3]–[6], and animal husbandry, such as studies of community knowledge about water resources and water pollution [7]; a study of local community knowledge as a cultural adaptation [8]; local knowledge in adapting to climate and climate change focuses on environmental ecology [9]; as well as local knowledge related to the health sector [10]; local knowledge of architecture, such as researching local community knowledge in the construction of earthquake-resistant vernacular dwellings [11]; researching climate-responsive vernacular architecture (bioclimatic) [12]. Local knowledge research related to vernacular architecture has not been widely carried out, so this research really needs to be done. Hopefully, this research can explore and invent the local knowledge community of Malay regarding to local knowledge in building vernacular housing, as well as obtaining a complete understanding of building traditions

1. Introduction

Local knowledge is a cultural knowledge that is

that have potentials for sustainability of Malay vernacular dwellings.

2. Literature Review

2.1. Local Knowledge

Nurdin & Ng [1] equate local knowledge with local wisdom, called "indigenous knowledge," possessed by certain ethnic groups in interacting with nature and the environment. Indigenous knowledge or local knowledge is dynamic, will continue to develop over time, and will be proven in accordance usage by local culture and environment [3]. Local knowledge existences are not only in the sectors of agriculture, health, and culinary arts, but also can be found in the sector of architecture, especially vernacular architecture.

Local knowledge is inseparable from local culture of people who build their dwellings [13]. Initially, build techniques were passed down from generation to generation [5], and previously imitated the house that had been built. This building knowledge is local, limited, and has no methodologies [14]. Initially, humans construct through the experiences by overcoming natural environment conditional and combining them following to their cultural background [15].

Vernacular architecture buildings have a simple style [16], and follow local knowledge principles with cultural local community. Process constructing of vernacular dwellings basically followed some of beliefs in traditional rituals, including in determining the building orientation, such as setting positions, and spaces in it. Local knowledge of vernacular architecture is oriented toward the building's physical form. The physical buildings, structural systems, and materials used are describing the local conditions [17]. Local knowledge is related to continuous presence of vernacular forms [2] and serves as a determinant of the continuity of the original identity of a community [6].

2.2. Vernacular Dwelling Continuity

Continuity in architecture implies the maintenance of identity. That's why architecture becoming a place that can be harnessed; whether by the style repetition, ideas, materials usage, concepts, forms, and functions, as well as traditional elements to the façade [18]–[20]. Preservation

for sustainability and reuse of architectural elements are part of continuity [21], [22]. Sanggoro et.al. [23] conveyed that the community needs to be involved in sustainable concepts that are environmentally and socially sound.

Vernacular dwelling understanding in terms of two features are, material continuity perceived by the senses and spatial continuity experienced by time movement. Vernacular dwelling implies continuity of historical [24].

2.3. Malay Vernacular Dwelling

The settlement pattern of Malay commonly lives in groups, but Medan expansion has taken a part of changes to this pattern of settlement, including Malay, showing that Malays are increasingly shifted to the suburbs [25].

Characteristics of Deli Malay vernacular dwellings [25] are houses that have space underneath (a stage house), an odd number of steps, a porch (front and side), and different floors, the roof shape is adjusted to the floor plan position, and the ornaments contained are adjusted to the owner financial condition.

3. Materials and Methods

This architectural qualitative research [26] was conducted by describing and analyzing phenomena, beliefs, and mindsets related to the ways of spatial continuity and physical vernacular dwellings in communities.

3.1. Research Location

Documentary studies were used to determine the location by tracing the history of the Sultanate of Deli on the east coast of Sumatra. Initially, three sub-districts were selected as research locations, scilicet Medan Area Sub-District, Medan Deli Sub-District, and Hamparan Perak Sub-District. This paper only explains one location, where located in Hamparan Perak Sub-District (Figure 1), approximately only 30 minutes to reach this location from the center of Medan. Distance and location conditions need to be considered, because the spread of COVID-19 was quite high enough at the time when data collection was taken. The insider location [27] was chosen by considering that researchers do not need to study local language and could easily and intensively enter the research area. The determination of the location is also based on the dwelling that still maintains the original authenticity [28].

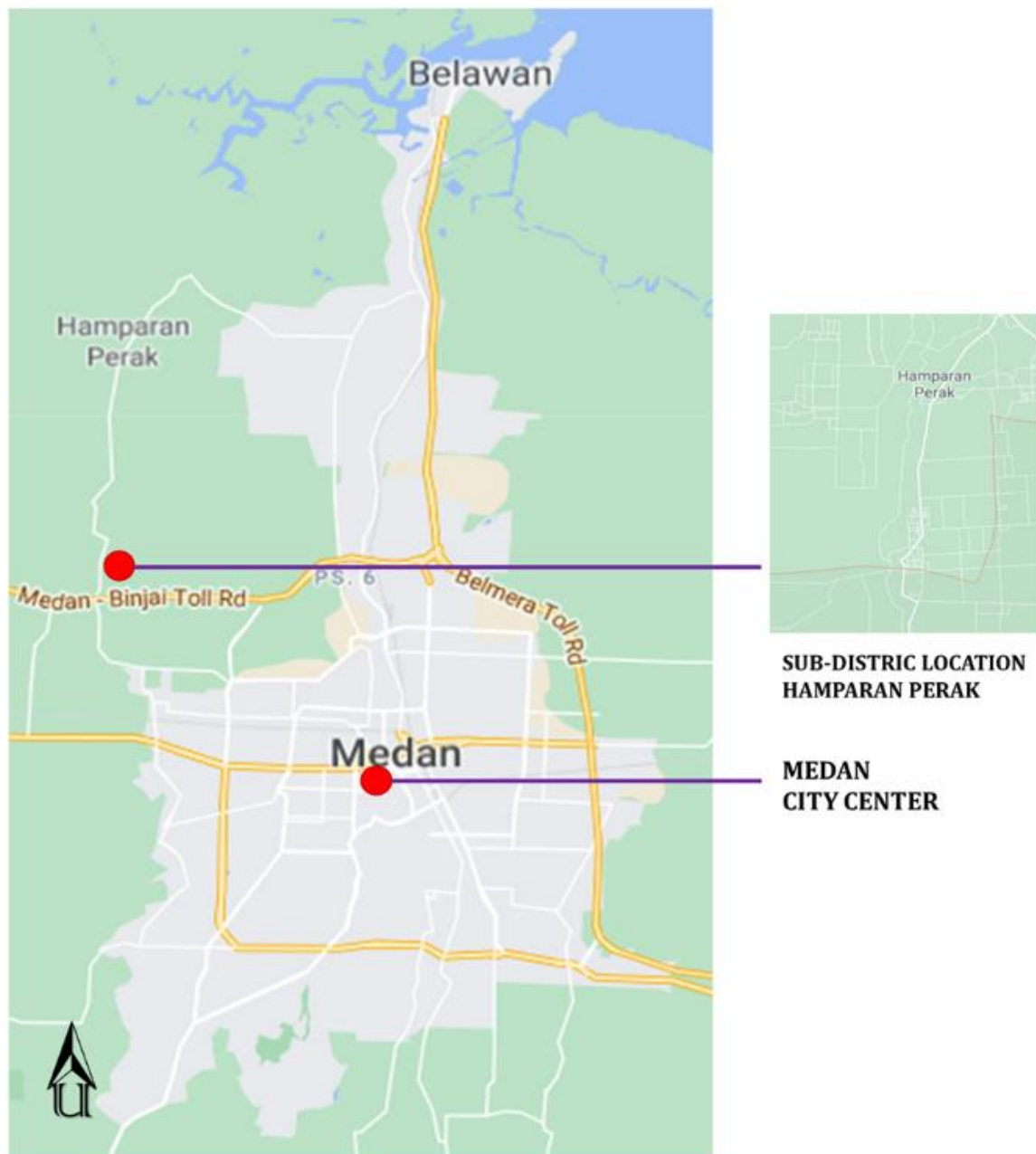


Figure 1. Research Location in Hamparan Perak Sub-District, 30 minutes from Medan City Center

3.2. Determination of Research Objects

This research object was determined using a purposive sampling technique based on criteria, such as the object visually having a Malay vernacular residential design character, still having parts as commonly a stage house, physical elements found keep being retained, occupied dwelling, dwelling condition well maintained, and the

owner is Malay family has been living at the dwelling from the beginning. 25 dwellings were found, 5 of which fulfilled the criteria for study object. To obtain research object, a documentary study was previously conducted related to the location of Malay settlements. Mosques with Malay characteristics are used as the basis for obtaining research objects (Figure 2).



Figure 2. The selected research object

3.3. Determination of Research Data Collection Methods

Documentary studies were used to map the existence of Malay settlements that were formerly in the territory of the Deli Sultanate. The natural observation method [30] is used to collect data in the field by documenting it in writing [31] and visually in sketches and photographs [32], [33]; measurements are also taken to obtain a physical image of the occupancy [34]. Furthermore, given the conditions of the COVID-19 pandemic, data was collected through semi-structured interviews to shorten time required in interacting

with residents of the house. As an interview guide, a list of questions was prepared that directly addressed the research topic.

3.4. Data Analysis Method

The data analysis process begins by examining all available data from various sources [35], such as historical data, interviews, observations that have been written down in field notes, personal documents, official documents, sketches, and photographs. The analysis started when data collection was taken in the field [36]. Analysis was carried

out to reveal the local knowledge of the householder by identifying the continuity of Malay vernacular dwellings. The continuity of Malay vernacular dwellings was obtained by analyzing continuity of spatial patterns and physical dwellings. [37]. Continuity analysis was carried out by dividing it into three periods, based on three generations living in the dwelling, T1 for the first generation, T2 for the second generation, and T3 for the third generation. Results of interviews and identification of continuity are used to reveal the influence of local knowledge on sustainability of Deli Malay vernacular architecture.

4. Result and Discussion

4.1. Spatial Analysis

a. Continuity of Spatial Pattern

Continuity can be seen in the presence of functions and spatial patterns that are still the same [38]. Functions of space in the main house in dwellings H-1 to H-5 tend to be similar from firstly they were built (T1) to nowadays (T3), as shown in figure 3. The spatial arrangement is in a continuous linear pattern from T1 to T3, and the layout remains similar by the time [24], [38], both in the main house and additional units. The spaces on H-1 to H-5 are arranged linearly, extending to the back of the site. This is useful if there would be an expansion, adding family members who can stay in the house [39]. The linear spatial pattern is one of Malay design characteristics of residential, aiming to accommodate all family members. By this linear pattern, the five residences develop at the backside of the main house and get additional units. This additional unit is occupied by a daughter's family (H-1, H-2, H-3, and H-5).

b. Continuity of Activity Pattern

Malay dwellings' space characteristics consist of a porch, main room (*tengah* room), bedroom (*bilik*), and kitchen [39], [41], like a part of the main house on H-1 to H-5. These spaces are continuous at additional units as a terrace, living room, dining room, bedroom, and kitchen (Figure 3). Continuity can be seen by existence of a part of the space room or architectural elements in the new design [19]. The rooms that are present during the T2 period are development or shift of several activities in main house, such as on H-1 to H-5, activities combined cooking and eating (Figure 3).

In the T3 period, the activity of receiving guests on the

porch of the main house becomes the terrace at additional units, such as residential houses H-1, H-2, and H-4 (Figure 3a, 3b, 3d). Meanwhile, in H-3 and H-5, the porch is replaced with a living room (Figure 3c, 3e). In main house, the living room functions as a family gathering place and is also used for eating and resting. To accommodate these activities, additional units (H-1 to H-5) are present as a living room or family room, dining room, and bedroom. MCK (bath, wash, and toilet) activities, H-1 to H-5 (T2-T3) similarity remains, placed at the main house backside due to as dirty area.

Of the five study objects, the pattern of H-4 (Figure 3d) has differences from other dwellings, especially in the main house. All rest activities (T2-T3 period) were moved to additional units. According to householders, more privacy room could be got because the house location was directly adjacent to the main road.

Although T3, H-1, H-2, H-3, and H-5 periods were occupied by two families, the activities of eating, cooking, and MCK used the same spaces. Parents or siblings live in the main house. Unlike the H-4 occupancy, parents live together in an additional unit.

c. Continuity of Activity Center Point

In the main house on H-1 to H-5, the *Tengah* room or family room becomes the center of activity. From this space, it can control all spaces around. Center activities in *tengah* room keep maintained until the T2 period for H-1, H-2, H-3, and H-5 (Figure 4a, 4b, 4c, 4e). Changes in the pattern of space H-4 affect to displacement of center activities in it. As a result, the T2-T3 period's central point of activity H-4 shifted to new units (Figure 4d).

T3 period in H-1, H-2, and H-3 central activity points became two at main house for parents' central activities, and an additional unit for the daughter's family (Figure 4). In H-3, the T3 period of the *tengah* room functioned as a place for close and honor family gatherings, while the family room/dining room functioned as a gathering place for close and main family. The center point of H-5 activities from T1 continues to T3, where is a family or living room in the main house (Figure 4e).

d. Continuity of Space Orientation

The continuity of bedroom position on H-1 to H-4 is all placed on the north side (Figure 4a, 4b, 4c, 4d). For Malays, the north direction has good meaning [42]. Bedroom placement in the additional unit (T3) follows the position of main house. Bedroom H-5 in the main house is on the south side (Figure 4e), as are bedrooms in additional units.

H-1



H-2



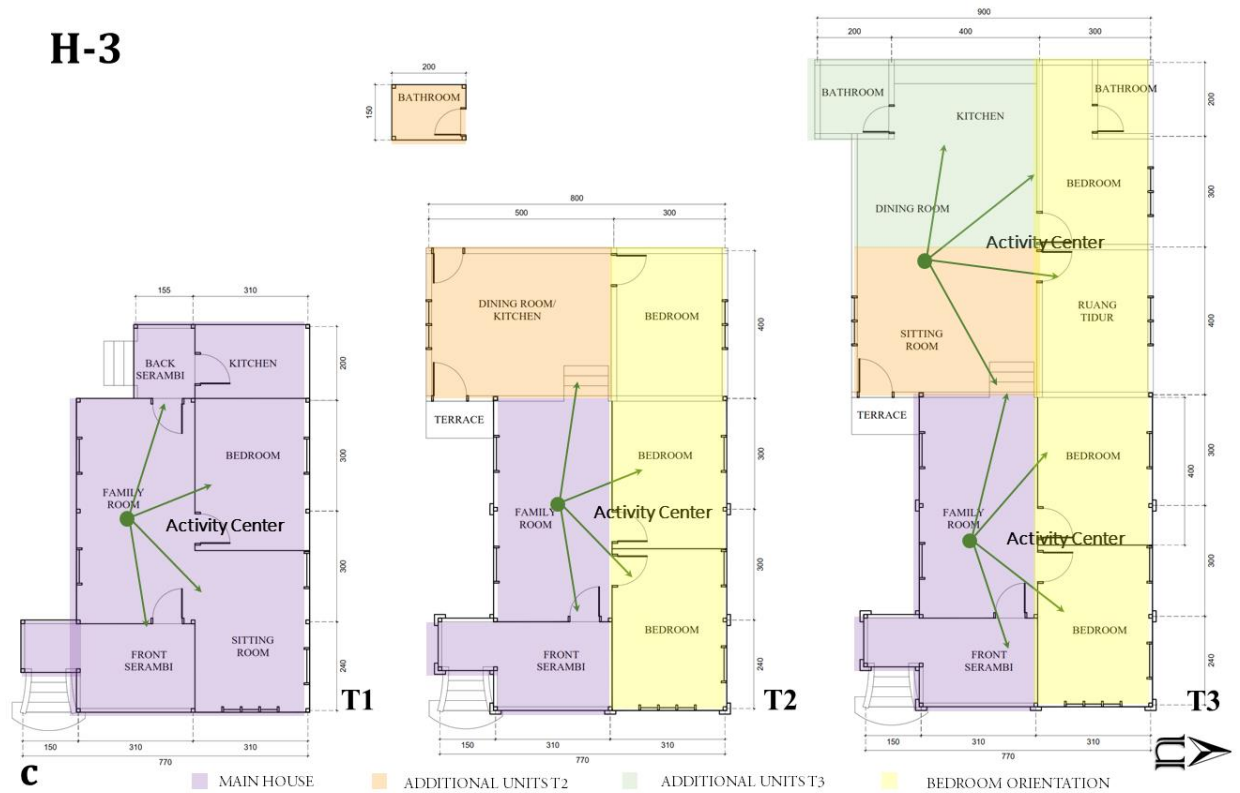
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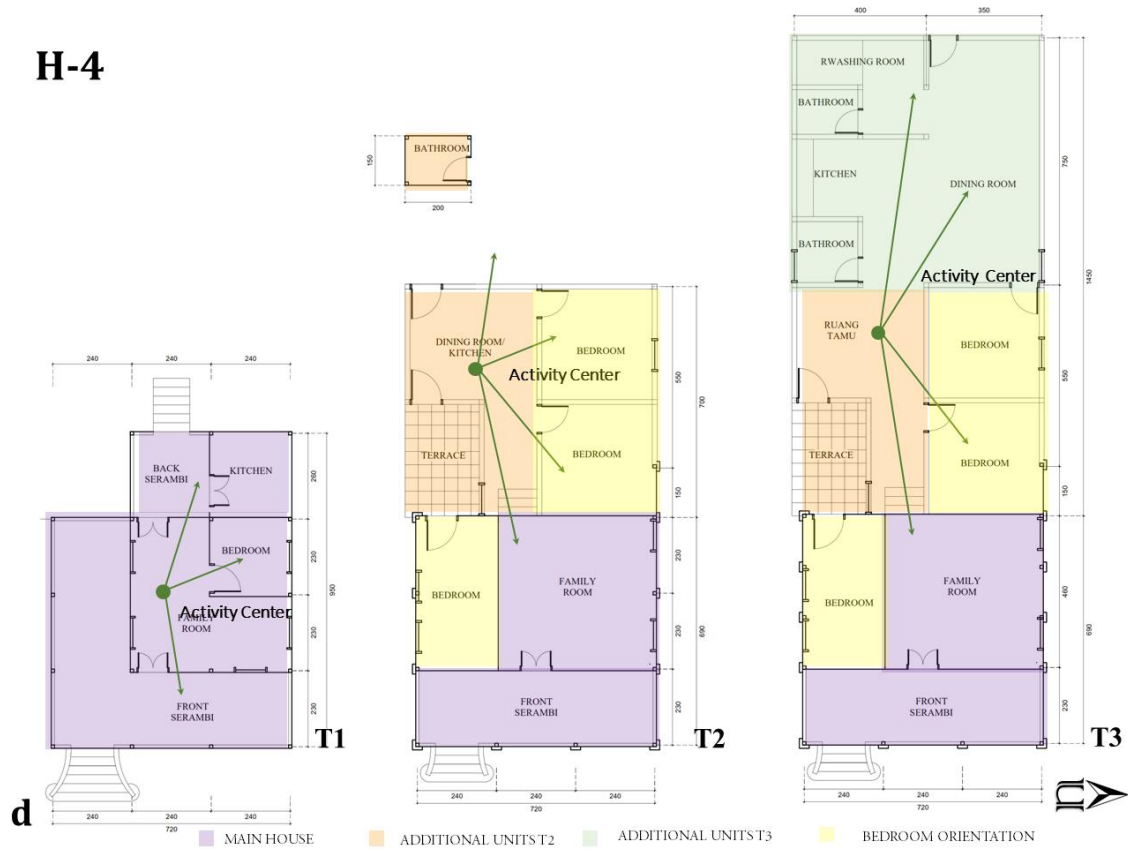


Figure 3. Spatial Patterns and Activity on Vernacular Dwellings form H-1 to H-5



H-2**H-3**

H-4



H-5

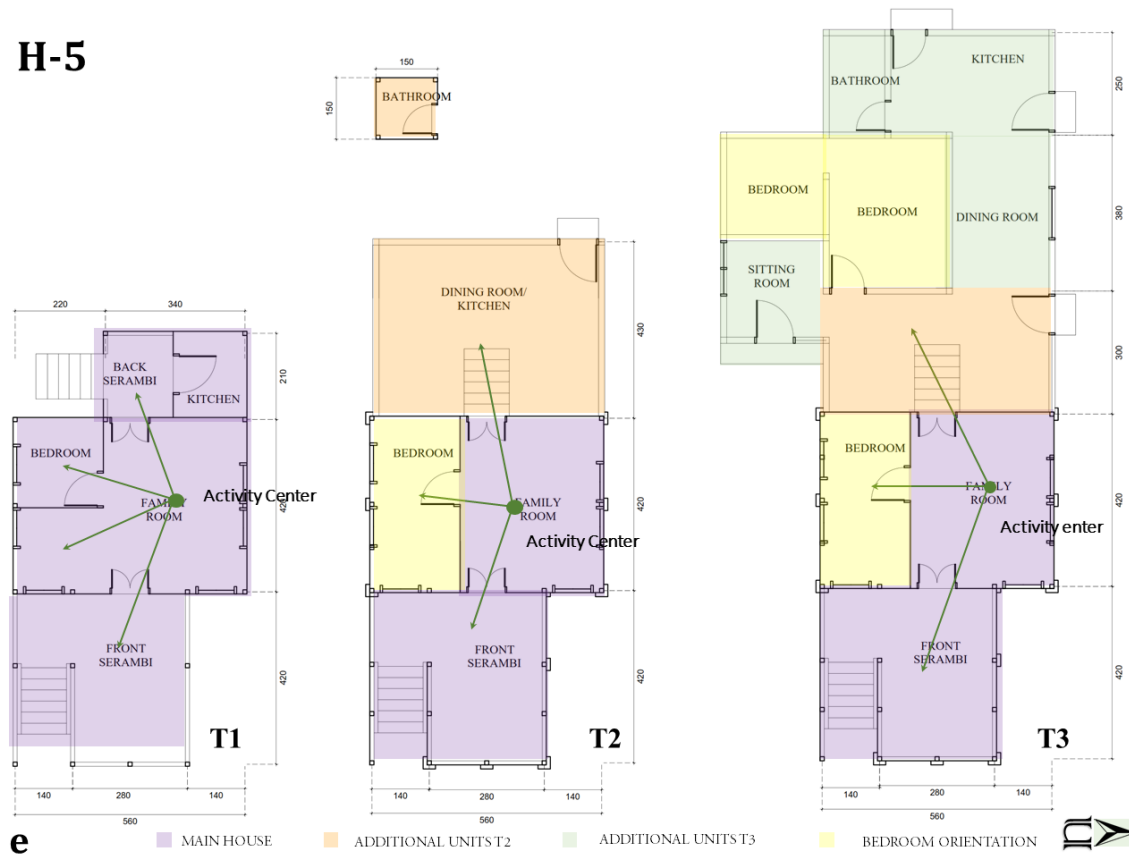


Figure 4. Continuity of Activity Center and Bedroom Orientation, form H-1 to H-5

4.2. Physical of Dwellings

a. Continuity of Stage Concept

The stage concept continuity in H-1 to H-5 main house continued until T3 period (Figure 5). The stage house concept is one of Malay residential design characteristics [41], [43]-[45]. In the front view of the five residences, the stage concept still stands out as a Malay residential design character. Although the height of pillars foundation during the T3 period was slightly lower than initial construction (T1), it did not remove the impression of Malay vernacular dwellings. From the side view, there is a unification between vernacular and modern housing (Figure 5). The difference is in the use of foundation the main house part keeps using the pedestal foundation (on the ground), while the additional units use the continuous foundation (planted); this condition follows technological advances [46].

b. Material Continuity

The use of different materials in the main house and additional units also prove that there are two different times (Figure 5). The main house, H-1 to H-5, is still dominated by wood materials, especially on the floors and walls. This condition certainly has an effect on lowering temperature inside [47]. In additional units, the floor material uses ceramics, and the wall material bricks. Roof material for both main house and additional units, continuously using sheets of corrugated iron.

Shapes *Kombinasi* Ridge roof used at H-1, H-2, and H-3, the *Limasan* Ridge at H-4, and the *Panjang* Ridge at H-5 highlighting the design character of Malay vernacular housing [41]. This roof shape for additional units continuously using such as combination ridges (H-1, H-5), and long ridges (H-2, H-3, H-4). Using wide roofs in the main house keeping continue in additional units. The sloping and high roof with wide roofers is an adaptation effort to face local environmental and climatic conditions [43], [47], [48].

4.3. Continuity of Malay Vernacular Dwelling Context in Hamparan Perak Sub-District

The context of Malay vernacular dwellings continuity was examined from spatial continuity, such as space pattern, activity pattern, activity center, and orientation, as well as dwellings, as physical continuity visual, and material. From Figures 3, 4 and 5, continuity context of the five research objects was identified (Table 1).

From table 2, it is known that spatial continuity, they are spatial patterns, activity patterns, activity centers, and bedroom orientations keep continuing in H-1, H-2, H-3,

and H-5 dwellings. Except for H-4, a displacement occurred in several activities, impacting on changing space pattern and activity center in it. activity pattern and bedroom orientation at additional units keep following the main house. Table 2 found that the main house has not changed so much, the original design keep being maintained. According to the occupants of five houses study object, said the main house keeps being retained as an ethnic Malay identity. Rapoport [49] states that there are conditions where elements of vernacular architecture are not easy or slow to change because these elements have a strong attachment to community culture, so continuity of main house can be categorized as core elements of Malay vernacular architecture. In addition, the main house has historical value for the family, which is a cultural memory of the past [50].

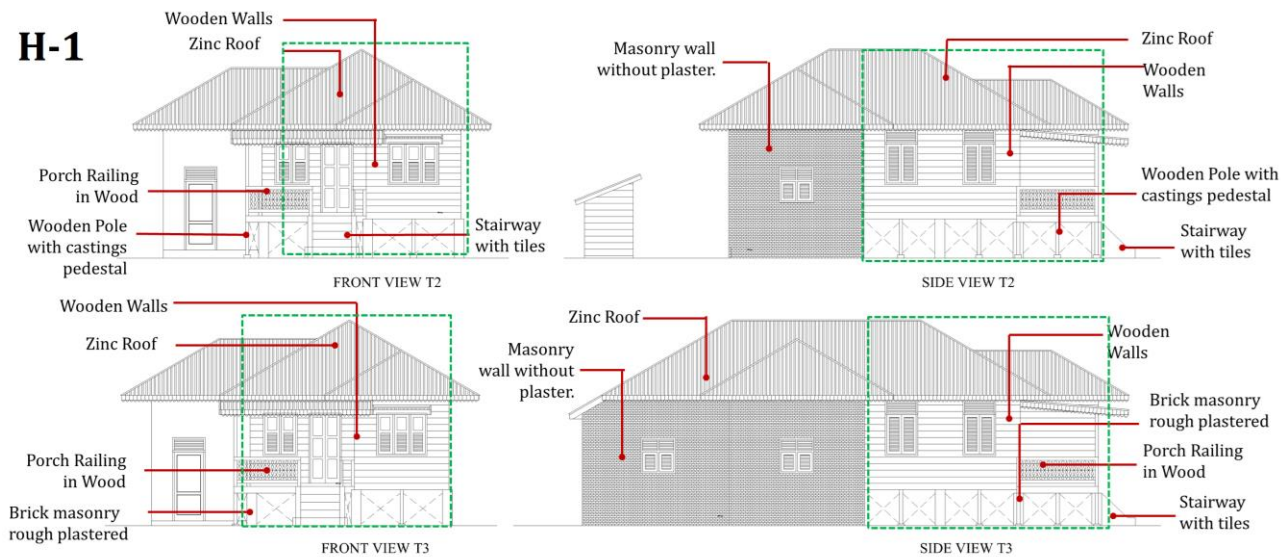
The spatial context in the additional units following to the main house continuously, as a statement by Quirix & Suleman [22] that continuity occurs when vernacular architectural elements appear in new buildings. From the spatial analysis of H-1 to H-5, it can be found that there is a spatial pattern continuity, activity patterns, activity centers and orientations. The new rooms at additional units are a repetition of the function [20], [24] the existing rooms in the main house. The spatial pattern continuity [38], [51] also connects to additional units, and similar spaces by giving room divider.

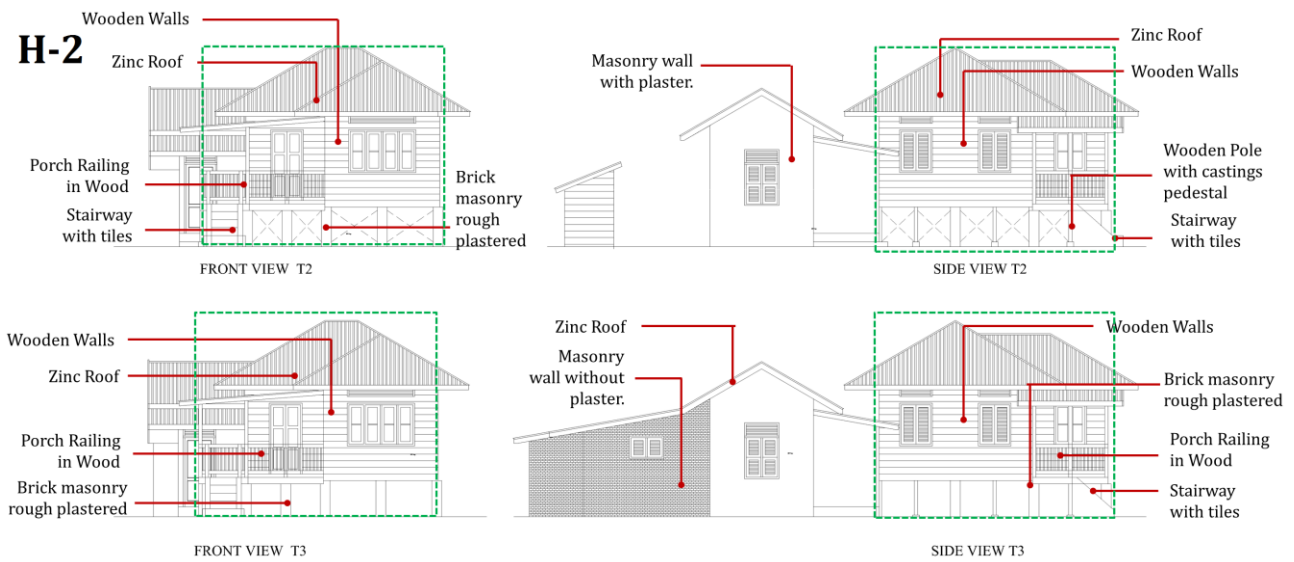
In addition to incorporating vernacular space elements in the new design, according to M. Philokyprou [52], materials used continuously are also a feature of continuity. The study of the physical context for additional units continuity was found on the shape of overhanging roof and covering material. Judging from all over physical appearance on H-1 to H-5 (front view), the stage concept continuity keeps being maintained.

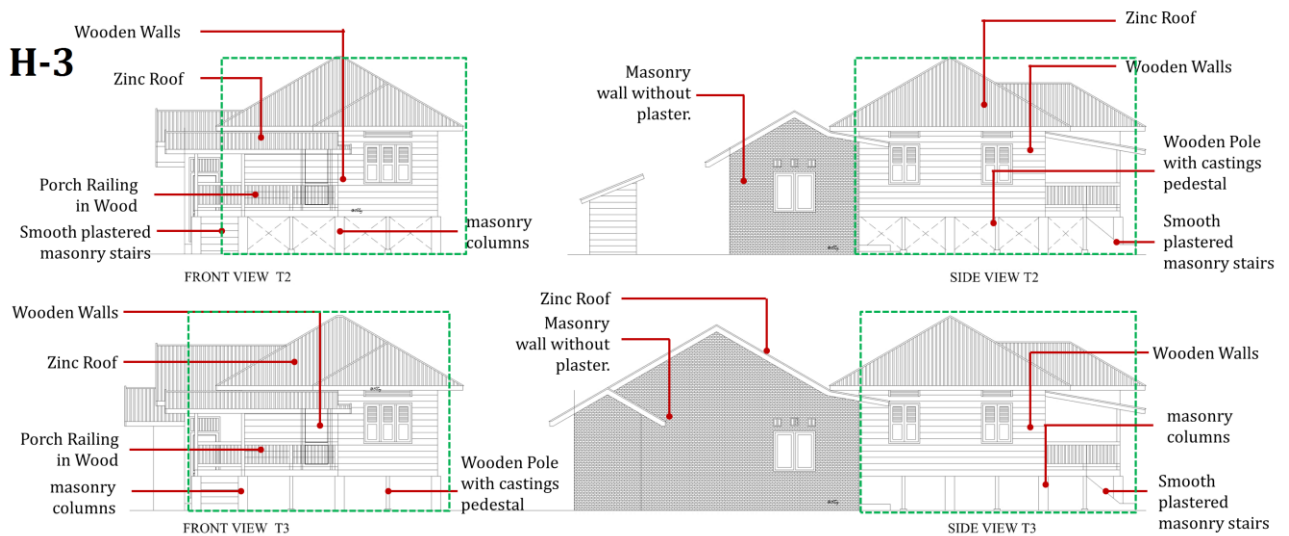
4.4. The Influence of Local Knowledge on the Continuity of Vernacular Dwellings in Hamparan Perak Sub-District

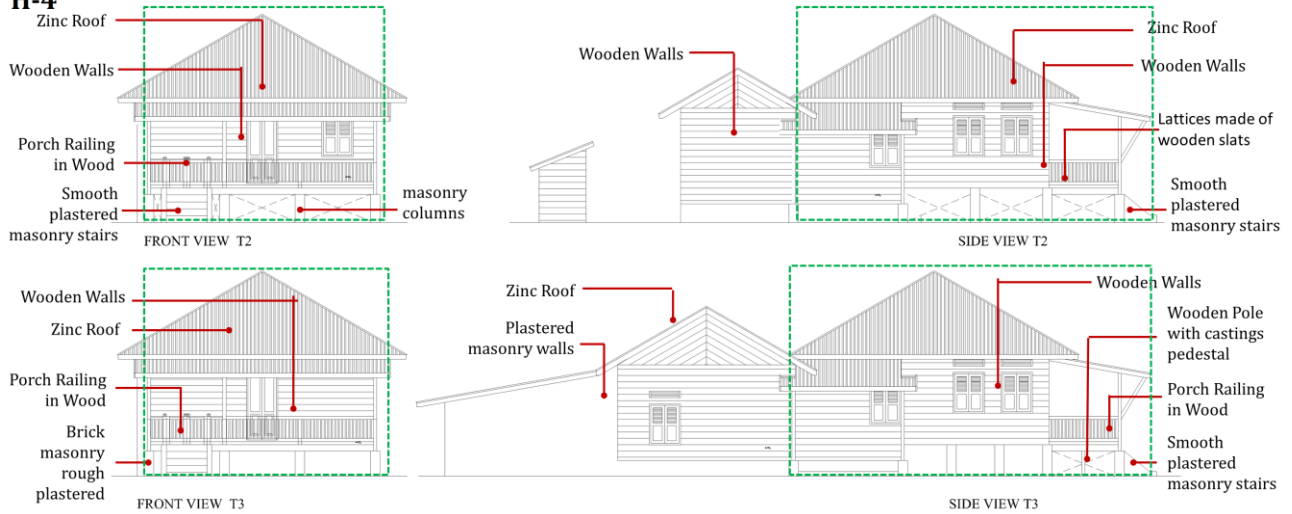
One part of local knowledge according to Simatupang [6] is related to knowledge in spatial planning. From the analysis of the five research objects continuity, there are several things that are still being maintained both in terms of spatial planning and dwelling physical building. To find out the effect of local knowledge on vernacular dwellings continuity by digging information from the dwellers (respondents), knowing how knowledge is kept, applied, maintained, and inherited by the next generation. Respondents for each research object were limited to only three generations.

H-1







H-4

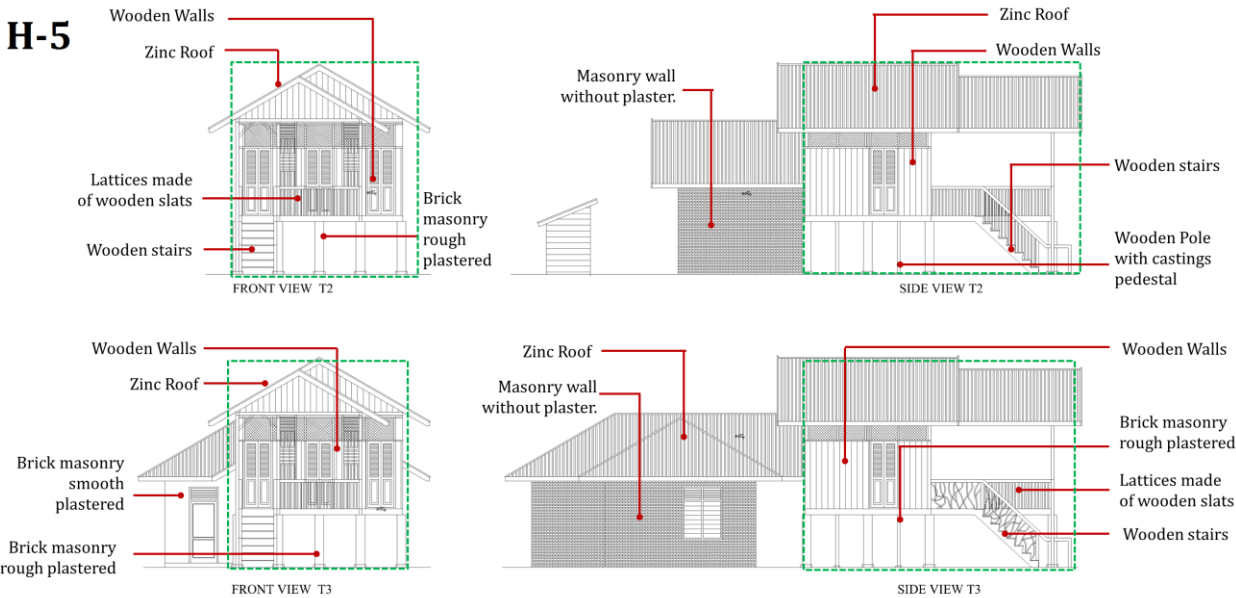


Figure 5. Continuity of Stage Concept and Materials Used

Table 1. Continuity of Malay Vernacular Dwelling in Hamparan Perak Sub-District

Continuity Context		H-1		H-2		H-3		H-4		H-5	
		Ri	Ut	Ri	Ut	Ri	Ut	Ri	Ut	Ri	Ut
Spatial	Spatial patterns	√	√	√	√	√	√	-	√	√	√
	Activity patterns	√	√	√	√	√	√	√	√	√	√
	Activity centers	√	√	√	√	√	√	-	√	√	√
	Orientations (bedroom)	√	√	√	√	√	√	√	√	√	√
Physical of dwelling	Stage Concept	√	-	√	-	√	-	√	-	√	-
	Floor Material	√	-	√	-	√	-	√	-	√	-
	Wall Material	√	-	√	-	√	-	√	-	√	-
	Roof Shape	√	√	√	-	√	-	√	-	√	-
	Roofing Material	√	√	√	√	√	√	√	√	√	√

Ri = Continuity of the main house refers to the beginning of the builded

Ut = Continuity of additional units refers to the main house

Table 2. Local Knowledge in Hamparan Perak Sub-District

Aspects of Local Knowledge	H-1			H-2			H-3			H-4			H-5		
	G.1	G.2	G.3	G.1	G.2	G.3	G.1	G.2	G.3	G.1	G.2	G.3	G.1	G.2	G.3
How to build	-	ST	TT	T	ST	-	T	ST	TT	T	ST	-	-	T	ST
The pattern of spatial and privacy	-	T	TT	T	T	-	T	T	ST	T	T	-	-	T	ST
The physical form of dwellings	-	ST	ST	T	ST	-	T	T	ST	T	T	-	-	T	ST
Structure and construction	-	ST	ST	T	ST	-	T	ST	ST	T	ST	-	-	T	ST
Size guide	-	TT	TT	T	TT	-	T	ST	TT	T	T	-	-	T	TT
Dwellings orientation	-	ST	TT	T	ST	-	T	ST	TT	T	T	-	-	T	TT
Bedroom orientation	-	TT	TT	T	TT	-	T	TT	TT	T	TT	-	-	ST	TT
Percentage of Local Knowledge (%)	0	50	25	100	44	0	100	63	31	100	75	0	0	94	38

Note: T = knowing: 1 ST = know a little: 0,5 TT = do not know: 0

The extent to which local knowledge affects the continuity of Malay vernacular dwellings is shown in Table 2. Each generation's knowledge is not the same, but it is known that the third generation's knowledge of Malay vernacular dwellings is dwindling. This is due to a lack of knowledge passed down from the previous generation. With a percentage of 94-100%, the first generation in H-2, H-3, H-4, and H-5 understand more about Malay vernacular occupancy. The knowledge of the second generation is approximately 44-75%, and that of the third generation is approximately 25-38%.

5. Conclusions

The continuity of space in the additional unit occurs due to the shift of some activities from the main house. Spaces that were initially multi-functional become one function in the additional unit. Thus, spatial continuity occurs due to the repetition of the same space function in the additional unit. Physical continuity occurs only in the main house,

which is still maintained in the form of a stage and is dominated by wooden materials. Physical continuity does not occur in the additional units, in terms of form and materials used.

The lack of local knowledge of the residents is not the main factor in the continuity of spatial, and physical form of the main house. From the research that has been conducted, it is found that spatial and physical continuity occurs especially in the main house. Continuity occurs due to three factors. First, the parents are still alive and living in the dwelling. Second, continuity occurs because the Malay vernacular dwelling house (main house) has historical value with parents and previous generations. Third, the existence of a vernacular dwelling house becomes an identity for the residents of the house as ethnic Malays.

Although local knowledge is not the main factor for continuity in Malay vernacular dwellings, the reduction of knowledge from generation to generation as a result of the lack of information from previous generations is feared to

have an impact on the sustainability of Deli Malay vernacular dwellings.

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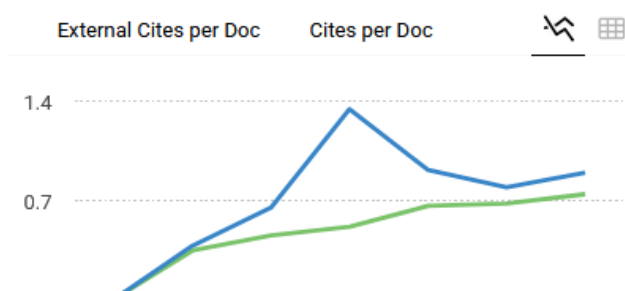
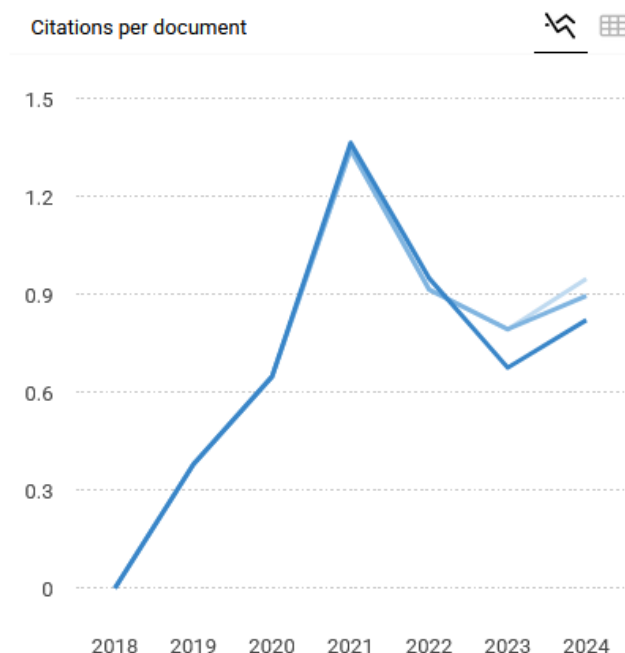
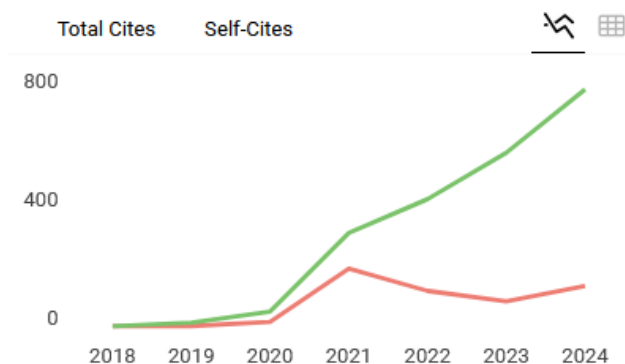
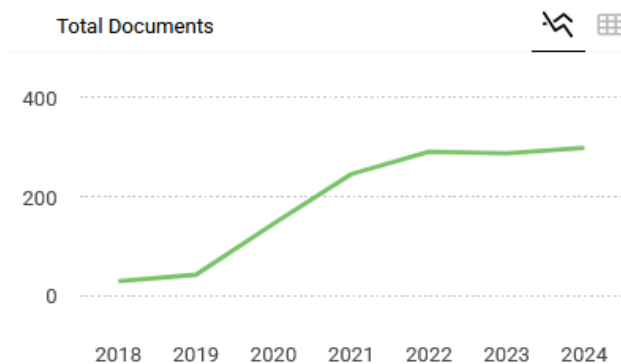
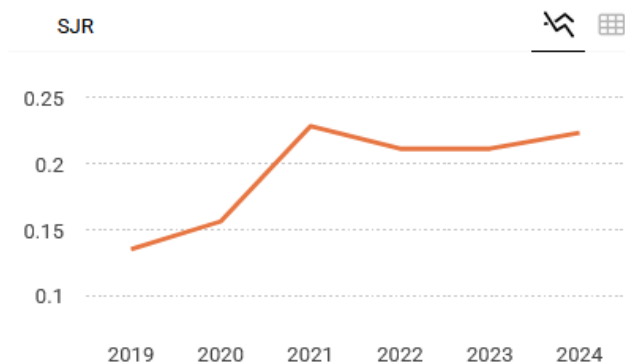
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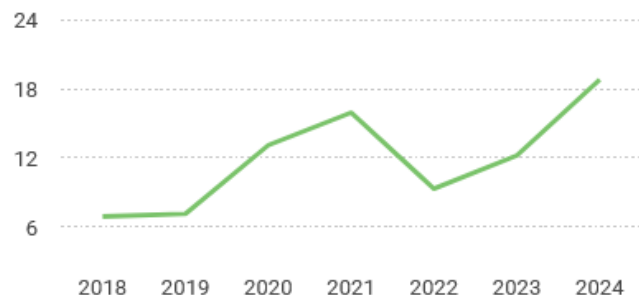
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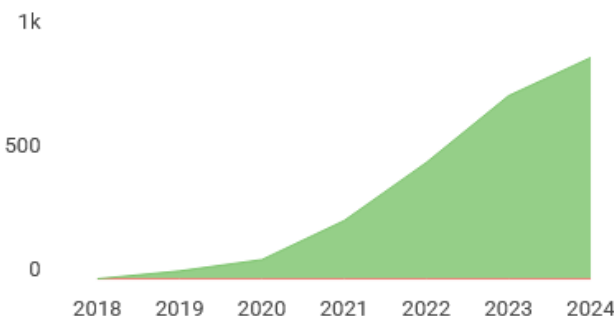
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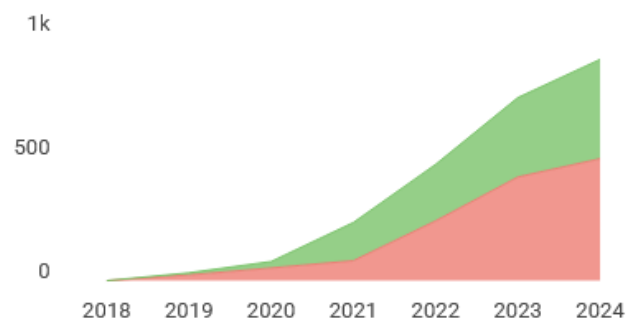
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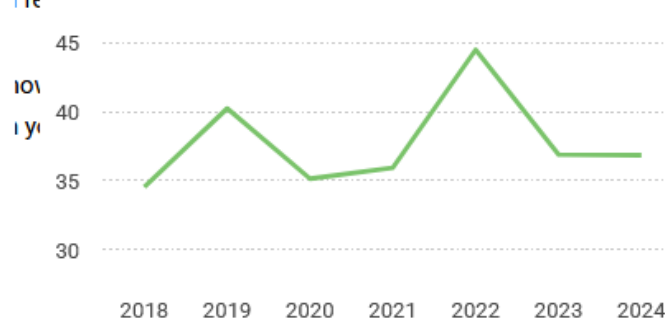


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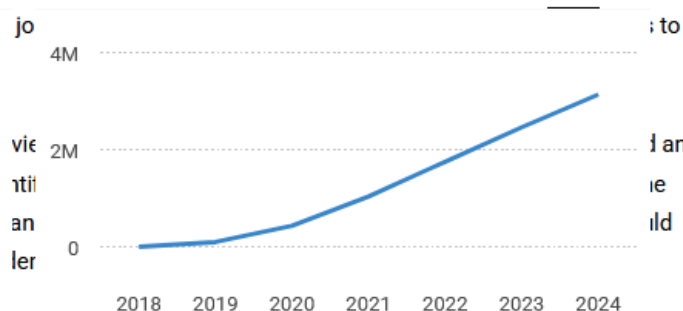
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