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Article

Vernacular Settlement Planning on the Kahayan Riverbank: A Shadow of Non-existent Planning Policies on Political Road Disruption in The City of Palangka Raya, Indonesia

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Abstract: Urban planning in third-world development cannot only refer to its outward appearance. The lack of urban physiognomy caused many problems regarding ineffective planning policies. Palangka Raya is the only capital city in Indonesia where President Sukarno inaugurated it in 1957. Then Tjilik Riwut, the first governor of Central Kalimantan province, who was also a Dayak ethnic leader, proposed Palangka Raya to be the capital of Indonesia at a National Council meeting in 1958, replacing Jakarta. President Sukarno, who chaired the meeting, agreed to further research on the idea. However, the emergence of Palangka Raya in 1957 and the initiation of the Trans Kalimantan National Road project in the 1990s have changed the spatial patterns of ancient Dayak cities that believed in rivers. This qualitative research investigates vernacular settlement planning in Central Kalimantan, collecting data related to photographs, drawings, sketches, and documents from the Tjilik Riwut Museum. Through social construction, this study narrates the meanings that arise in social relations, both individuals and groups. So far, the study of urban analysis using physiognomy is still lacking in depth and limited to persona and gestures. This paper is about the non-existent planning policies, looking at shadow aspects and subjectivity.

Keywords: vernacular settlement planning; non-existent planning policies; ineffective planning policies

1. Introduction

Generally, people often describe the city using personifications, e.g., the city slum, the city center, and the urban landscape. At the same time, in architectural works, people view the building facades and their elevations to assess the building's performance. However, this perspective is an assumption that only refers to the face as a mask [1–4]. A face or the soul mask is a persona, an aspect of a person's character presented or perceived by others [5]. Koller stated that using such personifications is essentially looking at the physiognomic problems of a city[2]. Webster's Dictionary defines physiognomy as discovering temperament and character from outward appearance. Facial features are possessed to show the quality of mind or character through their configuration or expression. The external aspect of an inner nature or quality is revealed outwardly. Etymologically, it comes from the middle English word *phisonomie*, from Anglo-French *phisenomie*, from late Latin *phisenomie*, *physiognomia*, from Greek *physiognōmonia*, from *physiognōmōn* assessing character based on its characteristics, from physical properties, physique, appearance + interpreter *gnomon*. Evans mentions that physiognomy is how to judge a city and architecture as a mask only if it does not project it on a deeper relationship [3]. The idea of physiognomy does not stop at the face as a mask but also the body and shadow as a whole [6–9]. Ballantyne even calls it a gesture, a movement usually of the body

or limbs that expresses or emphasizes ideas, sentiments, and attitudes [10]. In addition, Borlea states that the relationship between ego and identity is a shadow of what is not visible on the surface[11]. The invisible shadow is an interpretation of the personification, image, perception, metaphor, and myth of a building as a material (figure). Plato referred to it as *triton-genos*, so the human context, social, political, cultural, and environmental that underlies the cities can become a shadow of an invisible city (matter). The matter is *triton genos*, located next to ideas and relating to reason and rhetoric, which is relatively invisible. Plato stated that it has no form, limit, or quality, invisible to the eye, only to be understood by a false syllogism. The matter is the key to becoming something that absorbs everything (*pandeches*) and things that arise within him [12]. Meanwhile, the history of the *chora* - the third type of reality (*triton genos*) introduced by Plato in the middle of the Timaeus - and its interpretation are constant fluctuations and uncertainties between different meanings, in particular between matter and space, substance and place - one or the other, or both, one and the other. That is the history of the attempt to translate it (without, as far as possible, leaving anything out), the attempt to animate mythical discourse on the *triton genos*, together with its metaphors and figures - the nurse (*tithe*), the shapeless vessel (*amorphon*) (*hypodoché*), the mother (*meter*), space (*chora*), place (*hedra*), trace carrier (*ekmägeion*) –, in a logical sequence, following at least some of the well-known *platonic* principles to ensure a consistent relationship between the discursive, epistemological, and ontological fields [13].

Palangka Raya is a city in Borneo inaugurated in 1957 by President Sukarno. The Central Kalimantan Province formation was due to political reasons of the Dayak tribe that wanted a province separate from the South Kalimantan [14]. On the other side, the Dayak leaders entrenched decisions and perspectives in interpreting nature via their ancestral beliefs [15]. So when determining the city or the central point of the settlement, refer to their beliefs. In Kaharingan belief, the river is under the rule of the goddess named Jata. Jata is the image of a goddess depicted as a snake with the head of a dragon who brings wealth but also misfortune [16].

Since the Trans-Kalimantan road project approval in 1990-2000 passed through the Central Kalimantan Province, new districts and old regencies have better access to larger cities [17]. This road access has influenced social and cultural aspects, including the perspective and orientation of the people who previously relied on the river not only as a daily orientation but also as the main transportation route to big cities and vice versa. As a result, many regions in Central Kalimantan proposed their territories to become new districts to the central government, according to Law No. 5 of 2002 concerning the division in Central Kalimantan province. The central government then issued Law No. 33 of 2004 concerning financial balancing funds between the central government and sub-provinces about supporting new regencies and cities in Indonesia. Strengthening this policy in 2007, the central government issued Indonesia's Spatial Planning Law. The development policies issued by the central government have changed the patterns and perspectives of many indigenous communities, including the Dayak tribe in Central Kalimantan. And recently, with Law No. 3 of 2022 concerning the Indonesian National Capital, which places it in East Kalimantan, the island of Kalimantan pressure has increased dramatically.

Previously the Trans-Kalimantan road project, villages, and sub-districts in Central Kalimantan province have been isolated [18,19]. Their limited access to better transportation slowed the growth of their economic rate. During the dry, the flow of goods and services via river transportation took longer to arrive at their destination. Dayak's belief does not easily change their meanings about human relations, rivers, and places of residence [18]. In general, outside people have prejudiced that linear is the pattern of settlements of the Dayak tribes because line-ups follow the river flow. However, the meanings contained in their daily way of life, and the celebration of the holidays that they celebrate, are related to the beliefs that they adhere to, which are very different from the assumptions related to the patterns of settlement that appear on the surface. The perspective of the Dayak tribe is centralistic-structuralists continue to influence spatial patterns and building formation even though their orientation is no more to rivers, such as in modern houses at Palangka Raya. There will be denotative and connotative meanings in the centralistic and structuralist perspective of the Dayak tribe [20].

Previously the 1980s, Mihing (1978) stated that Dayak settlements in Central Kalimantan tended to be oriented toward rivers as a source of daily livelihood. They used rivers as the main transportation route, baths, and catch and fish farms, including people's houses facing the rivers. Meanwhile, culturally and socially, it refers to meaning about the customs and beliefs of the people. Winzeler (2004) stated that the holiday celebration and their way of looking at nature have formed a building space called Betang. Betang is a big, long stilt house with a large yard where the Dayak people and villagers' dwellings were oriented [15]. Betang is not only intended as a cultural meaning and social relationship, the existence of a leader in it, but also as a bridge that connects Dayak indigenous people with their ancestors [21]. Relationships that occur because of important rituals and ceremonies in their life make Betang a place that exists physically but also metaphysically as if it is a shadow of the Dayak tribe to heaven. Referring to C. G. Jung's opinion (2017), Betang is a persona.

The persona is the mask that mediates between the ego and the outside world, while what lies behind it is the shadow which becomes the interface between the self and the ego. Webster's Dictionary defines the ego as the self, compared to the world in the Latin word for I, which means a sign of a big ego. In general, using ego is only for one's self-worth, whether excessive or not. When used in the sense of exaggeration, ego is nearly synonymous with pride. The psychoanalytic theory functions as an organized conscious mediator between the person and reality in both perception and adaptation to reality[5]. The Dayak tribe was more concerned with its relationship with nature than outward appearances [19,21]. The paper elaborates on the views of the Dayak tribe, which were more colored by the meaning notion of an interface about transcendental thinking rather than its apparent function. The domination of these meanings in the Dayak culture has influenced the formation of urban space in Palangka Raya today.

2. Materials and Methods

The qualitative method used in this study is through social construction strategies. This paper narrated the meanings that arise in public relations, both individuals and groups [22,23]. The steps taken in the investigation include first data collection, photographs, drawings, and statistics. Second, recorded settlement patterns along rivers in Central Kalimantan province that do not been touched by the trans-Kalimantan road project. Three identified urban patterns after the trans-Kalimantan road project passed through the city and regencies. Fourth, analyzed some patterns of connotative meaning (shadow) in Dayak culture when their formed big cities, especially the design of the capital city of Palangka Raya. The results of the fourth process then become a reference in obtained conclusions.

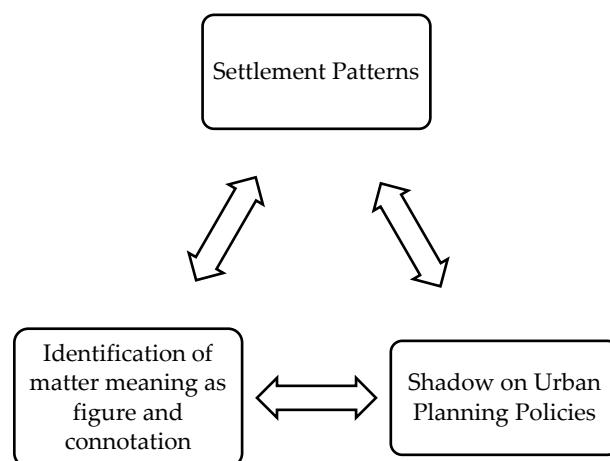


Figure 1. Methodology Framework.

In this social construction, the researcher collected individual opinions and community groups that define their understanding of the Trans Kalimantan Road Project regarding their daily living. Because of the various meaning and numerous have appeared in the Dayak tribe, this paper

explained some of the complexity of the views of the Dayak tribe alone rather than narrowing the definition down to a few categories or ideas. This study aimed to rely on agents' views of their situation as much as possible. Socially and historically, this paper negotiates several meanings subjectively. In other words, these meanings were not only imprinted on individuals' interpretations through their interactions with other people but also through historical and cultural norms that operate in the lives of those Dayak tribes. In this paper, researchers generated or inductively developed a theory or pattern of meaning.

2.1. Contextual Review

The shadow is an important matter that is no less important and clearly defined. In physiognomy theory, a shadow takes its position relative to criticism in architecture and urban space. Shadow is a reflection of the physical face of a culture, and body movements as visible physical forms of the face as a persona and the body as the shadow of a gesture [24]. Like the anima, it appears either in projection onto suitable persons or personified as such in dreams. The image coincides with the "personal" unconscious [25]. Shadowness embodies everything the subject refuses to admit about himself but consistently thrusts himself upon the matter directly or indirectly [26]. Jung states that shadows are an interconnection between the ego and the self, which never materializes as a persona.

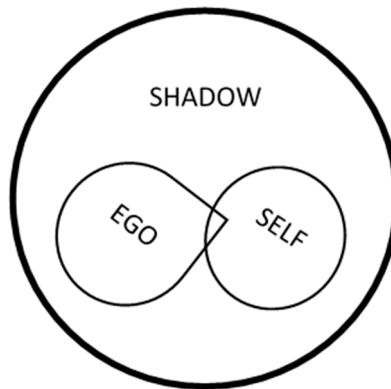


Figure 1. Shadow.

Connotation is a word meaning regardless of what is explicitly stated or explained [27]. The connotation comes from the Latin medieval, *connotationem* (*nominative connotatio*), the action noun of *connotare* " signifies other than main meaning, ". Denotation is the direct specific meaning that differs from the implied or related idea. Etymologically means " indication, the act of indicating by name or sign, " derived from late Latin *denotationem* (*nominative denotatio*), as the noun comes from the Latin, *denotare* " showing, marking, ".

Meanwhile, trope is a root word that then develops into tropical. Referring to the Cambridge dictionary, the word tropical is the climate of a tropical place. Based on its etymology, the tropic comes from the word *tropikos, tropos* which in classical Greek means turn in English: turn, change direction [28]. Based on the ancient Greek language, *Koine* means way or manner in English: way, direction. Then it becomes an Indo-European language that understands it as a way of *tropos*. So the translation in classical Latin is a metaphor or figure of speech. All of these understandings are embodied in early English literature tropes [28]. Thus the word tropicality - tropical+ity comes from the word trope means a representative meaning, gets the addition -ity, which comes from medieval French -ité, from Latin -itat-, -itas, from -i- (adjective stem vowel) + -tat-, -tas -ity, similar to the Greek -tēt-, -tēs -ity means level or quality. So when connecting trophic from a deeper perspective (quality), the meaning of tropics becomes tropicality.

2.2. Overweening Ambition in Planning Policy on Palangka Raya 1957

Personalities such as Tjilik Riwut and Ir. Sukarno immersed himself in the struggle for Indonesian independence in 1945, then initiated the Dayak people in Kalimantan to take a position

merged with Indonesia. Tjilik Riwut is a hero who initiated and stated that he represented 146 Dayak tribes in Kalimantan united with Indonesia in front of President Sukarno in Yogyakarta in 1946, as an accord of unity in Indonesia's struggle to defend independence (N. Riwut, 2018)[14]. For Tjilik Riwut, the Central Kalimantan province planning proposal with Palangka Raya as the capital city in 1957 also shows the Dayak tribe to be able to stand on an equal footing with other tribes in Indonesia. To show this ambition, Tjilik Riwut published a book entitled "(Kalimantan Memanggil) Kalimantan Calls" in 1958 by the publisher Endang, Jakarta, with a foreword from Ir Sukarno. Unfortunately, the plan to move the National Capital city to Palangka Raya never materialized until President Joko Widodo moved the National Capital to Nusantara in East Kalimantan on 16 August 2019.

Tjilik Riwut was not alone because the request for a province for the Dayak tribe had existed since the area called Indonesia, which was still under the Dutch East Indies colony. Following the agreement of the Dayak tribes in Tumbang Anoi, Central Kalimantan 1894, the Dayak tribes saw that their existence was not valued and felt the need to unite and gather to form an organization called "Sarekat Dayak" in 1919. However, the tribal organization in the Dutch East Indies era was only a meaningless splinter, so it didn't receive government support [14]. After Mahir Mahar, a young person of the Dayak tribe who had just returned from the island of Java to Banjarmasin in 1938, educated Dayak people formed the organization "Pakat Dayak" with chairman Mahir Mahar and secretary E.S. Handuran. "Pakat Dayak" is an organization that became a mouthpiece or forum for the Dayak tribe to speak out to the government (Dutch East Indies). However, at that time, the desire of the Dayak tribe to get its territory, the Dutch East Indies government only promised and never made it happen until the Dutch East Indies lost the war with Japan in 1942 [14,29]. Support was also not small after Indonesian independence, especially since the Indonesian government took power from the Dutch government through the Round Table conference in The Hague in 1949. Since the early 1950s, the planning proposal for Central Kalimantan to secede as a province has grown stronger, accompanied by various movements and resistance that tended to rebel even though not in armed contact. Meanwhile, Ir Sukarno had long fought for Indonesian independence with his movement group to become Indonesia's first President. He finally agreed to form the province of Central Kalimantan with Emergency Law No. 10 of 1957. With the presence of the province of Central Kalimantan, President Sukarno suppressed various upheavals that had arisen in society. Because apart from Central Kalimantan in 1957, nine other regions also demanded to become new provinces, and some rebellions arose around that era [30]. With the presence of the provinces within Indonesia's territory, the strength and unity of the Indonesian nation is increasingly visible.

3. Result

3.1. Finding and Discussion

Before the 1970s, today's cities were still underdeveloped slums. Even long before the 1960s was only a village oriented towards a building (Betang). Scharer explained that these villages are more oriented toward the river[15]. Based on the total population in Central Kalimantan in 1976, there were 845,452 of the total population still in the village, sub-district, and district areas. The population that occupies the city is only 39,365 thousand people.

Table 1. Total population of Central Kalimantan, by Gender per Regency and City 1976 (BPS, 1977)[26].

| No | Regencies and City | Male | Female | Total |
|----|-----------------------------|---------|---------|----------------|
| 1 | Palangka Raya City | 20.546 | 18.820 | 39.365 |
| 2 | Kapuas Regency | 128.468 | 125.287 | 253.855 |
| 3 | Gunung Mas Regency (adm) | 26.295 | 29.472 | 55.767 |
| 4 | South Barito Regency | 32.543 | 30.847 | 63.390 |
| 5 | East Barito Regency (adm) | 23.017 | 24.026 | 47.043 |
| 6 | North Barito Regency | 28.805 | 28.880 | 57.683 |
| 7 | Murung Raya Regency (adm) | 27.518 | 26.868 | 54.385 |
| 8 | East Kotawaringin Regency | 73.618 | 70.360 | 143.978 |
| 9 | Katingan Regency (adm) | 25.656 | 26.319 | 51.975 |
| 10 | West Kotawaringin Regency | 39.196 | 38.812 | 78.008 |
| | Central Kalimantan Province | 425.661 | 419.791 | 845.452 |

Meanwhile, Gunung Mas, East Barito, Katingan, and Murung Raya, still have the administrative status of assistant regent and have not fully become districts. Meanwhile, the population ratio between the regency capital and its sub-district areas was 1:3, and approximately 30% lived in urban areas. About 70% of the population was still in sub-districts or rural areas. By measuring based on this ratio, it shows that the total population in Central Kalimantan before the 1990s who lived in urban areas was 281,191 people. Thus the city was not an attraction to live for most of the population of Central Kalimantan.

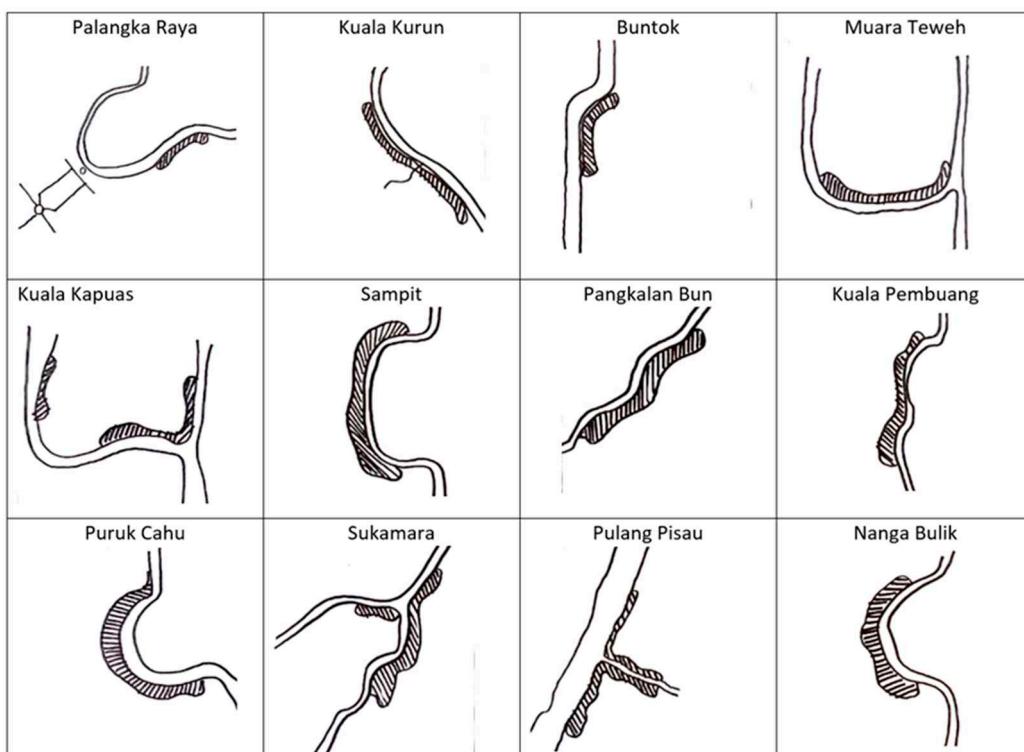


Figure 3. Cities Morphological in Central Kalimantan, with a linear pattern before Trans-Kalimantan Road oriented in the 1990s. (Source: Analyses, 2023).

Meanwhile, cultural activities such as the Tiwah ritual in the Kaharingan belief are in rural areas in Central Kalimantan [19]. So, trajectory and transcendental thinking are found in the population in these rural areas. But on the other hand, the increase in population later forced them to leave the center of their village (betang) to develop their dwellings along the riverside because the river was a

resource for their life at that time [31]. Because of that, this thinking is very influential in making place in urban spaces in Central Kalimantan, especially the City of Palangka Raya.

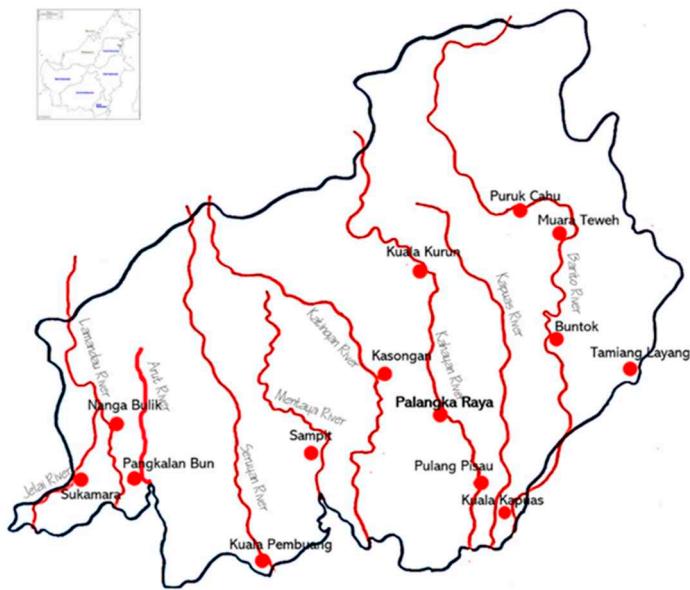


Figure 4. River through the cities in Central Kalimantan (Source: Analyses, 2023).

On the one side, the rivers in Central Kalimantan had a width almost the same as the estuary up to several hundred kilometers inland. It was very advantageous coupled with sufficient depth so that the rivers flow navigated far inland. The best distance to reach was in the rainy season, and this distance drastically drops in the dry season. An example was the Kahayan River. During the rainy, medium to large-size driver's vessels can sail as far as Kuala Kurun (Gunung Mas Regency) and Teweh, located a few hundred kilometers north of Palangka Raya. But during the dry reached Palangka-Raya was only a few hundred kilometers from the estuary been so hard. If comparing the reach distance in the dry season with the reach distance in the rainy season, the ratio is around 1:3 [19]. This figure was not the same for all rivers because some even exceeded that ratio.

Table 2. Rivers and Waterways in Central Kalimantan 1976 [32].

| No | Rivers and Canals | Length (km) | Pass-Through Regencies and Cities |
|----|-------------------|-------------|--|
| 1 | Barito River | 670 | North Barito Regency, Kapuas Regency, and South Barito Regency |
| 2 | Kapuas River | 312 | Kapuas Regency |
| 3 | Kahayan River | 429 | Kapuas Regency and Palangka Raya City |
| 4 | Katingan River | 393 | Katingan Regency |
| 5 | Mentaya River | 237 | East Kotawaringin Regency |
| 6 | Seruyan River | 350 | Seruyan Regency |
| 7 | Kumai River | 186 | West Kotawaringin Regency |
| 8 | Arut River | 210 | West Kotawaringin Regency |
| 9 | Lamandau Regency | 300 | West Kotawaringin Regency |
| 10 | Jelai Regency | 200 | West Kotawaringin Regency |
| 11 | Serapat Canal | 28 | Connecting the River of Kapuas in Central Kalimantan to the Barito River in South Kalimantan |
| 12 | Basarang Canal | 24 | Connecting the Kapuas River and the Kahayan River |
| 13 | Tamban Canal | 25 | Connecting the Barito River to the Kahayan River |

Large and medium-sized merchant ships from Banjarmasin sailed far into the interior of Barito (Murung Raya regency) when the rainy season [33]. Ships measuring 1 to 5 tons sailed easily up to the Hanyu River on the Kapuas River. The Seruyan River can be navigated up to Tumbang Sanamang. Ships ranging in size from 750 to 1500 tonnes can only sail inland at a maximum distance of 100

kilometers. While transportation using rowing boats in the 1990s was very rarely done. Almost every river now serves only merchant ships, while the mobility of people from one place to another becomes faster and more economical by road.

3.2. The Dayak People's Identity as Urban Planning Paradigm Before 1957

Thus, referring to the definition of the trope that becomes tropicality is a figure of meanings contained in the relationship between individuals and society in deep presenting space [28,34]. Before the 1990s, the Dayak Ngaju settlement had dominated most areas in the province of Central Kalimantan. This tribe consists of several sub-tribals, following the rivers of Lamandau, Arut, Kahayan, Katingan, Kapuas, and Barito, who believe in what their ancestors said and certain places that their elders identified. For tribes whose livelihoods are from the forest, farming, and depending on the river. Their villages or residences mean a temporary space in the world [15,21]. Dayak tribe divides its space into three parts, the heavenly (*ngambu*), the human realm (*pambelum kalunen*), and the underworld (*ngiwa*) [15]. Each of these spaces marks with figurines, such as rivers, sky, vegetation, houses, sculptures, and some animals.

The Tiwah ceremony escorts the spirits of ancestors or people who died earlier to the heavenly realms by the Kaharingan priest called Basir [35]. It needs a betang that owns stairs seven steps, nine, or eleven to metaphor the sky levels. The number of steps varies depending on the position of the Betang in the river area and the tribe where the Betang is made. Usually, for Kahayan, the number of steps to the landing is seven. For the stairs, they call it *lampat*, while for the landing stage, it is called *sandehan*. On the stair, at the seventh steps, nine, or eleventh, the Dayak family owns the dead placed the coffin. Before the priest conveys the prayer to Heaven, the family or the priest of those dead man's bones cleans them in the water. Usually, the seventh, ninth, or eleventh steps are in the form of landings square. The peak ceremony is cleaning the bones or leftover meat residue until midnight [35]. Because referring to the Dayak tribe, the night is darkness where life begins and ends. Then after the cleaning process is complete, the bones that were previously placed on the 7th of the steps stair or 9th or 11th, the Dayak Family owner those bones load them to the *Sandong*. *Sandong* is the same house as betang but smaller and a metaphor for the incarnation of betang in heaven. Generally, the *Sandong* of the Dayak Family constructs in front of the Betang, at the same height as the floor of the Betang, accompanied by a statue of the deceased's family, such as the mothers, fathers, or children.

Even though they are almost the same morphology, *Sandong* has striking differences from betang, especially in the building materials and decorations. *Sandong* is heaven's metaphor. So, the Dayak people made *Sandong* entirely from ironwood (Ulin). The *ulin* tree is the most enduring type of wood on the island of Kalimantan. In the wood classification species for construction in Indonesia, ironwood is the first-class wood with first-class uses [36]. This wood is tough and non-corrosive, resistant to weather changes. Dayak people deliberately made *Sandong* resemble Betang because betang is also a personification of Heaven. *Sandong* applies ironwood thin strips as roofing material or *sapau* in the Dayak language. Likewise, ironwood is the main construction on its floor, called *laseh*. On the *sapau* or part of the roof, some *Sandongs* decorate with some birds (*tingang*) as personifications for a messenger from above that state the dead man had arrived in heaven [37]. This carving bird always faces the Ngaju direction, which is the higher part of the upriver. While the back is a Palangka carving, a spirit boat that brings the souls and bones of people inside the *Sandung* to the higher realms (Heaven).

Betang is the big house of the Dayak tribe, built on stilts. Generally, ironwood is the principal material of the pillars of the stage, floor, and superstructure. However, the wall (*tambing*) that separates the room must be a construction of bark (*nyamu*) as the personification of the natural world to distinguish it from *Sandong* as a metaphor for heaven. By tying *nyamu* to the wall construction using smooth rattan, if damaged, it is easy to repair or replace it. Rattan (*uwei-bajakah*) is a type of forest-resistant rattan to heat and rain. This type of rattan is water-resistant, so it doesn't break or break easily when used. They used it to patch holes in boats. Sometimes, it was as a stick, a replacement nail. *Nyamu* is a ready-to-use material for constructing walls (*tambing*). There are three products from *Nyamu*. Firstly, the outer skin of the wood used for the outside wall is rougher. Second,

Nyamu, which separates the interior more subtly. Third, the Dayak tribe uses the more delicate Nyamu for clothing-making materials. The height of the Betang adjusts to the number of stair steps. Betang stair separates into two parts, part one consisting of seven, nine, and eleven up to the landing. And the second ladder is a short odd number of steps until the ladder meets the Betang entrance. The entrance of the Dayak tribe calls it *bauntunggang*, while the door leaf they call *atep*.

The human space, for the Dayak tribe, is the space resulting from the marriage of *Ranying Hattala Langit* (a male figure), ruler of the heavenly realms governing in the sky [37], with *Kabentaran Bulan Bawin Jata* (a female figure) governing the underworld [15]. Because of this marriage, Dayak people were born [16]. For the Dayak tribe, the oldest people are the center of life. Thus parents or the elder are always the standard or orientation of their life. Then this becomes the meaning implemented in the Betang space. As an honor, the life of Dayak always starts with the oldest. When built Betang, the first pillar inserted in the soil was the oldest one (*jiji bakas*). In this sense, the *bakas* pillar is a manifestation of the age of the building, as the origin and story of the life of the tribal children who built the betang. Therefore, a male and female tiger statue on the seventh step of the stairs signs people before entering the Betang.

The statues of male and female personifications also signify place and direction (wayfinding). Men are always in the downriver (*Ngawa*), while women are always in the upper river (*Ngaju*). Likewise, regarding the position in the Betang, the old lady and man were always in opposite places. The statues and the Sandong in front of the Betang must face the rising sun as a sign beginning of life, both on earth and in heaven. So that in this way, Betang must also face toward the rising sun (*pambelum andau*). Scherer (1963) calls it an orientation of the Dayak tribe where the opposite part of *pambelum andau* is *pambeleb andau*. Thus there are four directions of Dayak human orientation: *pambelum andau*, *pambeleb andau*, *ngaju*, *ngawa* [15]. The meaning of the *pambelum andau* is all the good things that come, the beginning of the light of life. This is the best choice for constructing houses, villages, and cities in the world of Dayak people's beliefs. *Pambeleb andau* is all that is unfortunate, and the end of life goes to the dark. So that there are no Dayak tribes who build their houses facing this orientation [15]. *Ngaju* is all the classics, oldest, and antiques where Dayak people stored treasures and prosperity. While *Ngawa* is, all the new knowledge and technology comes from. Why was that? Because the only new thing came from the downstream river (*ngawa*).

Jiji Bakas becomes the beginning of the boundaries of human space and a center for orientation and territory. For the Dayak tribe, the Tiwah ceremony for summoning spirits must use a gong (*garantung*). And *garantung* sound is also an invisible boundary mark for a Dayak tribe's territory. Gong is a tool made of bronze that protrudes round in the middle as a center point to be hit. The history of this tool comes from Vietnam around 500 BC. Gong invented in China around 200 BC and entered Indonesia is around 500 AD. Once upon a time, if someone went out into the fields or hunted in the forest, got lost, and never found his way back, the Dayaks went to the forest where those people who got lost, while got beating the *garantung*, called them back [16]. Dayak people hung and placed the *garantung* on the *Jiji bakas* of Betang as a starting place. Thus the betang is the center of Dayak human spatial orientation. Because as a center of orientation, it was usually in the betang that a tribal chief resides, older and kids.

The underworld is the realm of *Jata*, the god who rules over that realm, where rivers and water are personifications of the underworld[16]. *Jata* is the image of a water dragon who rules over wealth (giving wealth) and the underworld, a jealous goddess figure. The image of *Jata*'s wealth it contains always applied to a *balanga* (jar) and gold. The ceramic jar origin was from the Yuan dynasty in China around the 12th century AD, which entered Kalimantan due to the trade carried out by the Chinese[38]. *Jata* is a metaphor for the form of a snaking river. A Dayak who dies will enter the realm of death (*liau*) or hades, where the *Jata* reigns[15]. Therefore, during the Tiwah ceremony, the Laluhan ceremony always precedes the Tiwah. In this ritual, the Dayak priest expels reinforcements or evil spirits before entering the human realm or to Betang. Thus, the river is always the personification of the lower part (*ngiwa*) as a sacred and frightening place. For Dayak people, a river was a depth place, so no one knew what was in it (mysterious). To cross the river, the Dayak tribe needs a spirit boat from the gods above that protects their journey. They called the boat's name

Palangka[35]. They called the boat's name Palangka. Palangka is a spirit boat, which is a boat used by the gods above to descend to the human realm. So the ruler of the underworld doesn't interfere. Because the river is also a sacred place, the Dayak people clean their bodies in the river.

In this context, before entering the Betang, someone must clean his body in the river, then go up (*lumpat kan ngambu*)[16]. Because when the Dayak people go to the fields, they don't bathe from the betang but go downstairs (*muhun kan ngiwa*). These two aspects of daily life are a benchmark when the Dayak people start their day. Thus they construct a connection between the *ngiwa* realm and the human realm. Marking it, the Dayak people make a ladder (*hejan*) that connects the two. There is a difference between the *hejan*, which they use to climb the Betang, and the *hejan*, which they use to move their bodies from the *ngiwa* realm (*jata*) to the *ngambu* realm. The *hejan*, from *ngiwa* to *ngambu*, is unpredictable because the bottom goes into the river. To climb it, it is forbidden to look back. For the Dayak tribe, looking back is seeing the darkness or the past. The Dayak tribe's returns from the farms usually start at dusk and enter the darkness. At this time the era there were no lights or lighting. So, before it gets dark, they should go home. Because of this, if people climb the *hejan* (stairs) and then look backward, they can fall or slip because the body becomes unbalanced.

3.3. The Existence of Vernacular Settlement Patterns Along the River in Central Kalimantan After Road Political Project in the 1990s.

However, the story above is difficult to repeat because of the change in the paradigm of the Dayak people, who no longer see the river as part of their daily life. Today, several major rivers and tributaries in Central Kalimantan remain the means of transportation for Dayak people only to send goods, such as palm and coal, because not all the roads that connect certain villages or towns properly deliver those goods. Likewise, with the Trans-Kalimantan road project. It doesn't go through all the districts and the city in Central Kalimantan province. Not all rivers become accessible to replace roads, and not all villages can contact the city by road, which is about 5-7%. The rivers in Central Kalimantan are as follows:

Table 3. Rivers in Central Kalimantan [39].

| No | River | Length (km) | Width (m) | Depth (m) |
|----|----------|-------------|-----------|-----------|
| 1 | Jelai | 200 | 150 | 8 |
| 2 | Arut | 250 | 100 | 4-6 |
| 3 | Lamandau | 300 | 150 | 6 |
| 4 | Kumai | 175 | 250 | 8 |
| 5 | Seruyan | 350 | 250 | 5 |
| 6 | Mentaya | 400 | 350 | 6 |
| 7 | Katingan | 650 | 250 | 6 |
| 8 | Sebangau | 200 | 100 | 5 |
| 9 | Kahayan | 600 | 450 | 7 |
| 10 | Kapuas | 600 | 450 | 6 |
| 11 | Barito | 900 | 350-500 | 8-14 |

Based on the morphological classification, the pattern of settlements that develop along the river consists of two parts, river-oriented cities, and road-oriented cities. Road-oriented cities are cities that have now become district capitals. Meanwhile, cities that are not road-oriented before the Trans Kalimantan Road Project exist, but these cities have already become extensive settlements along the river.



Figure 5. Trans Kalimantan Roads Project (TKRP) across Central Kalimantan is 2002 km. (Source: Analysis, 2023).

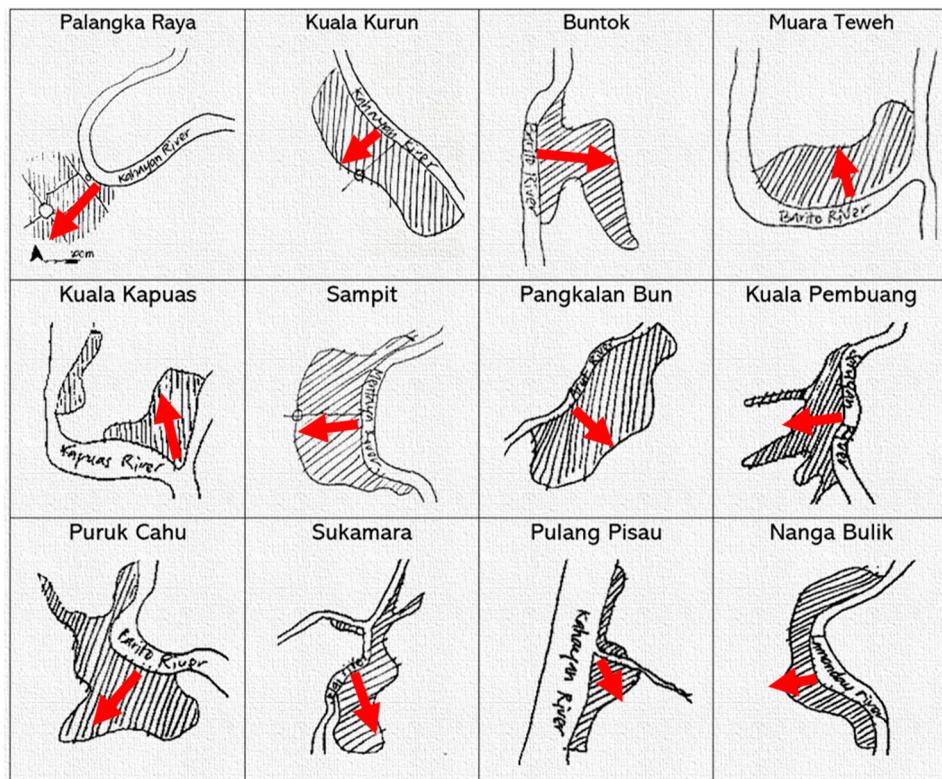


Figure 6. Cities morphological in Central Kalimantan on Riverbanks after Trans-Kalimantan Road Project (source: Analysis, 2023).

Two cities are developing along the road, Tamiang Layang City and Kasongan City. The town of Tamiang Layang had a population of 43043 before the 1990s. With an area of 32,545 km² with a population density of 4.5 people/km². Kasongan City at that time had not yet been formed. These two cities developed in 2002 when the Indonesian government implemented the regional expansion policy. Then the existence of the Trans Kalimantan Road Project has made policies for cities in Central Kalimantan Province to switch to roads, especially in new cities such as the city of Kasongan, the capital of Katingan and Tamiang Layang districts in East Barito capital.

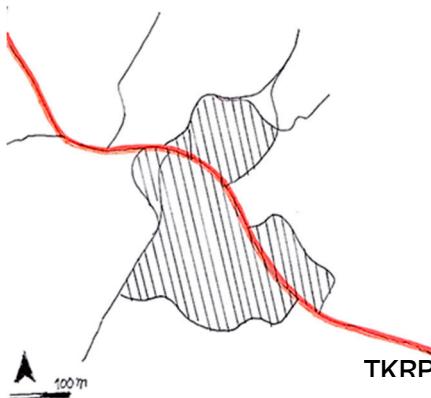


Figure 7. Tamiang Layang City, Capital of The East Barito Regency refers to the Regional regulation of Regional regulation No. 6 of 2014-2034 concerning Spatial Plans for East Barito Regency

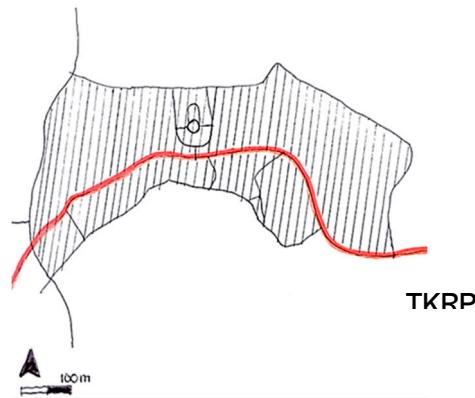


Figure 8. Kasongan City, Capital of The Katingan Regency refers to the Regional regulation of Katingan No. 4 of 2019 concerning the 2019-2039 Katingan Regency Spatial Planning.

Meanwhile, from the condition of the cities that used to be oriented towards the river, they slowly developed towards the Trans Kalimantan Road. The attraction makes the city widen. This policy then makes land development a commodity. Following this development, there is a problem of scarcity of land in the city center. Coupled with the spatial planning law policy in Indonesia in 2007, these cities no longer view water (vernacular) as part of urban planning. Because the law does not regulate a city plan related to water. As a result, issues arose around the city's plan, which was more concerned with its position on the mainland than near the river or water.

Table 1. Total population of Central Kalimantan 2022 [39].

| No | Regencies and City | Number of Population (Person) | | |
|----|-----------------------------|-------------------------------|-----------|------------------|
| | | 2020 | 2021 | 2022 |
| 1 | West Kotawaringin Regency | 270.388 | 272.531 | 274.935 |
| 2 | East Kotawaringin Regency | 428.895 | 432.283 | 436.079 |
| 3 | Kapuas Regency | 410.446 | 416.181 | 423.210 |
| 4 | South Barito Regency | 131.140 | 131.606 | 131.997 |
| 5 | North Barito Regency | 154.812 | 157.231 | 160.235 |
| 6 | Sukamara Regency | 63.464 | 64.941 | 66.845 |
| 7 | Lamandau Regency | 97.611 | 100.535 | 104.387 |
| 8 | Seruyan Regency | 162.906 | 164.378 | 166.072 |
| 9 | Katingan Regency | 162.222 | 163.099 | 163.989 |
| 10 | Pulang Pisau Regency | 134.499 | 135.336 | 136.221 |
| 11 | Gunung Mas Regency | 135.373 | 138.407 | 142.309 |
| 12 | East Barito Regency | 113.229 | 114.243 | 115.406 |
| 13 | Murung Raya Regency | 111.527 | 112.445 | 113.483 |
| 14 | Palangka Raya City | 293.457 | 298.954 | 305.907 |
| | Central Kalimantan Province | 2.669.969 | 2.702.170 | 2.741.075 |

The change in the orientation of cities to roads, then the politics of roads, have influenced the development of these cities. Begin from the flow of goods and passenger transportation has converted into automobile transportation patterns within the city and also out of town. Governor Regulation Number 6 of 2021 concerning domestic service travel, no longer mentions that trips can use rivers. As a result, land that is beside the main roads becomes an expensive commodity. The development of the city's capitalization has become faster than before. Local cultural homogeneity no longer confines cities, but now cities become open to more heterogeneous outside cultures. With the population increasing to 2,741,075 in 2022, almost three and a half times before the 1990s, which was only 845,452 people, it shows that the development of cities in Central Kalimantan is experiencing rapid. But the growth in urban areas has emerged some issues regarding land ownership, segregation, and informal-formal.

4. Discussion

4.1. Palangka Raya Settlement Planning is a Shadow of the Trans-Kalimantan Road Project.

Tjilik Riwut, the first governor of Central Kalimantan province, once proposed Palangka Raya as the capital city of Indonesia to replace Jakarta at the National Council meeting in 1958. Palangka Raya begins the city development planning from the Dayak Ngaju ethnic group's vernacular meaning. Identity in the building's space, placement, orientation, and position become the physical characteristics that emerge to the surface. One of the demands within the Dayak tribe rules is to present a leader to start everything, particularly for initiating the city development. So, Tjilik Riwut invited Ir Sukarno to lay the first pillar of the city of Palangka Raya on 17 July 1957 to fulfill those rules [40,41]. This is the same as when the Dayak tribe built Betang, which must involve parents as an attitude to honor the elders. In that context, Ir Sukarno is the President of Indonesia, a personification of the oldest person within Dayak's meaning. This shadow implies that the matter President Sukarno has stuck in is a pillar of a Betang. For the Dayak tribe, Indonesia is a big house that is the personification of Betang.

For the Dayak tribe, the first pillar of a betang, apart from being a *jihi bakas*, is often also referred to as *Luhing*. *Luhing* is another name that given to *jihi bakas* by the Dayak tribe in the Ngaju Dayak region [42]. Because the pillar is the symbol of strength, the first of all beginnings. And to put it can not be just anyone. So to do it honorable, President Sukarno was the right choice. Looking at its position, the first pillar of the city was on Jekan Hill, right on the Kahayan Riverside facing the east. This location is nearest Pahandut village. Pahandut is a village located in the middle of Central

Kalimantan province. The position of this village is also right between the upstream and downstream of the Kahayan River. In connotative meaning, for the Dayak tribe, whose thinking is centralistic, connecting the lower, middle, and upper realms and centered on one center has placed Pahandut Village as a center.

Palangka Raya began its city development by constructing the Governor's Office in 1959. This office is the workplace for the governor of Central Kalimantan, facing *pambelum andau*, where the light of life begins. Same orientation with a Betang. A water harbor underneath is a personification of its relationship with the Jata, who rules the underworld. This office is precisely facing the Kahayan River. Since President Sukarno inaugurated it from 1957 to 1961, the City of Palangka Raya has not had a fixed plan as a reference for its development. This is mainly due to the Indonesian government's funding difficulties [43]. Nila Riwut stated that the only plan the Central Kalimantan Provincial Government had in carrying out the construction of the City of Palangka Raya at that time was discussions with Dayak traditional leaders, together with the Special Committee for the Development of the City of Palangka Raya, including representatives from the Public Works Service, Munasir and Ir. DAW. Van Der Pijl, referring to the Acting Governor of Kalimantan's Letter of Assignment at that time RTA. Milono[14]. Thus came the Palangka Raya Urban design resembles a spider's web. As a development of the position of the Governor's Office facing the Kahayan River and an upward orientation (*ngambu*).

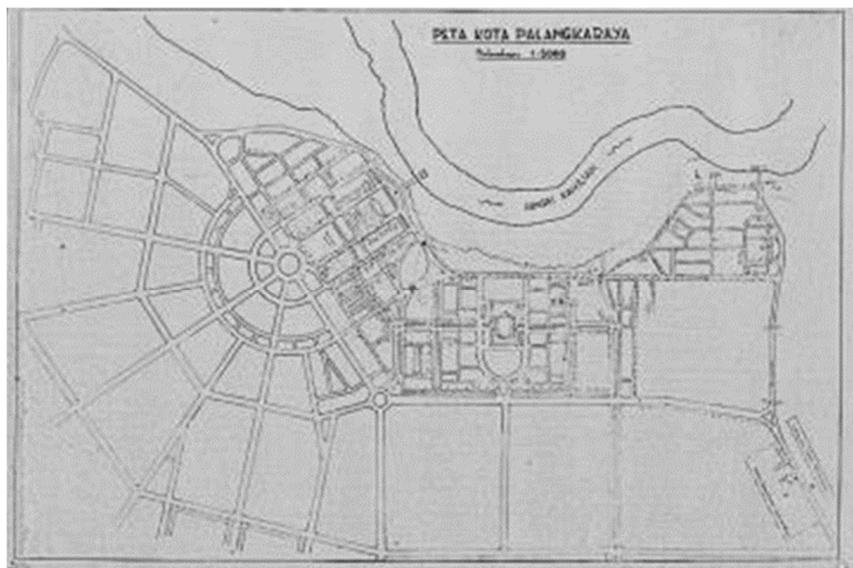


Figure 8. Palangka Raya City 1957-1961. (Source: FGD, Indonesian Architect Institute Archive, 1 April 2022)[33].

Between the 1950s to 1965, Indonesia received assistance from the United Nations for its urban development. They are consultants from England, America, Denmark, and Australia [44]. One of the results of this assistance was the birth of the Initial Plan for Palangka Raya on November 1, 1961, which received approval from Ir Soefaat, head of the city and regional planning service, Department of Public Works and Energy.

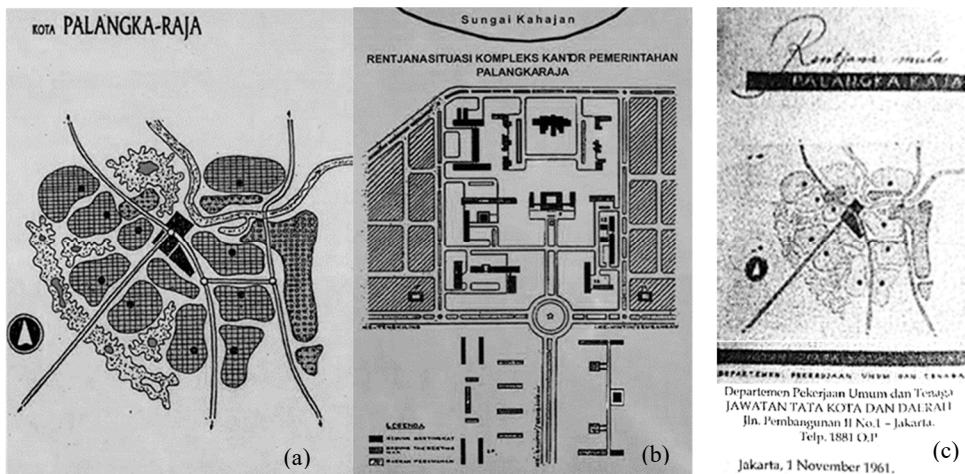


Figure 9. The initial plan for the City of Palangka Raya in 1961 [14] (a) Schematic planning of the city of Palangka Raya; (b) Schematic Design of Government Land Use; (c) Cover the initial planning for the city of Palangka Raya 1961.

5. Conclusion

This study concludes that a way of interacting with the outside world has changed the view of traditional society in seeing the way they live. They no longer see the dialectics between settlements and rivers as a vernacular way of life most appropriate for them. The government's current view of capitalization and natural resources provides more funding opportunities for the community in developing their territory. For local communities in a homogeneous culture, issues of land, ownership, and resources were easier to find approval and solutions. But after the arrival of other residents from different areas, making urban problems more complicated to get an agreement. The government's delay in paying attention to an area causes the region to be left behind culturally. The government tends to show its iron-handed ways of implementing rules and laws that various parties cannot refuse. An example is the relocation of the Indonesian capital city to Kalimantan is about the shadow of non-existent planning policies. Even though the planning issues aim to accelerate development in the region, in this way, traditional society will face pressure for its social and cultural life. For a country, the isolation of a region is so detrimental to society. So far, in urban planning (both macro and micro), city planners have not paid much attention to the physiognomic aspects of the city in depth, only touching on the persona (physical) aspects, gesture (idea) aspects, and visible (tangible) of the shadow aspects. Meanwhile, other aspects of gestures, such as presence (attitude and sentiment) and intangible shadows, have not received attention in future planning. This paper attempts to analyze the physiognomy of cities, looking at shadow aspects and subjectivity. In participatory urban planning, passive people (a person's moment gesture) can be bridged by the difficulty of reading their ideas through an intangible city physiognomy approach based on human science. The one thing that challenges physiognomy is reducing the subjectivity side. So far, analytical studies using city physiognomy have been less in-depth, only limited to persona and gesture.

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