P-ISSN: 2541-6960 | E-ISSN: 2549-8754
Yupa: Historical Studies Journal
Vol. 10, No. 1, 2026, pp. 49-56
https://doi.org/10.30872/yupa.v10i1.5855

The Transformation from Water to Land Transportation in Samarinda (1980–1998)

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Abstract
Water transport once played a central role in Samarinda when road connectivity was still limited, especially before the construction of the Mahakam Bridge. This study examines the transformation from water to land transportation in Samarinda during 1980–1998 using the historical method through heuristics, source criticism, interpretation, and historiography. The findings show that the bridge, together with expanding road infrastructure and transport technology, made land travel faster and more efficient than river modes such as ferries, tambangan, and klotok. As a result, everyday mobility shifted toward land routes, river transport patronage declined, and the income of boat operators decreased. The case demonstrates how urban infrastructure reconfigured accessibility, travel behavior, and the socio-economic position of traditional river transport.

Keywords
Samarinda; modal transformation; river transportation; land transportation

Article History

Received	Revised	Accepted	Published
29 October 2025	02 February 2026	17 February 2026	30 April 2026

How to Cite
Siregar, F. A. H., Azmi, M., Marfuah, S., & Rahuma, A. (2026). The transformation from water to land transportation in the municipality of Samarinda (1980–1998). *Yupa: Historical Studies Journal*, 10(1), 50–59. https://doi.org/10.30872/yupa.v10i1.5855

Introduction

The Municipality of Samarinda was formally established on 21 January 1960 under Emergency Law No. 3 of 1953, State Gazette No. 97 of 1953, concerning the establishment of Level II regency/municipality regions in East Kalimantan. Initially, Samarinda was divided into four districts: Samarinda Ulu, Samarinda Ilir, Palaran, and Samarinda Seberang. The Mahakam River, which flows through Samarinda, played an important role in the city's development. As a major regional economic center in East Kalimantan, Samarinda occupied a strategic position for industrial activity, trade in goods and services, and urban settlement development (Ars et al., 1986).

During the 1970s and 1980s, Samarinda was still not connected by a bridge to Mangkupalas (Samarinda Seberang), making access between the two areas difficult. At that time, the government provided several forms of water transportation and river crossings. The Mahakam Bridge, whose construction began in 1983 and was completed in 1986, linked Samarinda Seberang with Samarinda City and made everyday travel faster and more efficient for local residents. Within transportation history, bridge construction and the expansion of road networks can be understood as efforts to improve regional accessibility that subsequently altered mobility patterns because land travel became more direct, measurable, and efficient (Sitorus et al., 2016; Heinen et al., 2017).

A comparable case can be found in Jambi, which is divided by the Batanghari River. There, residents traditionally used a boat type similar to the tambangan, locally called moda, as a common crossing service. The construction of two bridges connecting the western and eastern banks of Jambi generated a shift from water transportation to land transportation. As a result, river transport was increasingly abandoned. The comparison with Jambi is important because studies of river transportation in that city show that the presence of bridges does not always eliminate river transport entirely, but it tends to reduce its intensity once people gain access to land-based alternatives that are faster and more comfortable (Kartini & Widiyatmoko, 2013; Bachtiar et al., 2024).

In transportation studies, modal change is generally influenced by a combination of service quality, travel time, cost, and the availability of new infrastructure. Studies on travel behavior show that perceptions of service quality and users' social characteristics shape everyday mode-choice decisions, while improved connectivity and mass-transit facilities can encourage shifts from older modes to those perceived as faster and more reliable (Abane, 1993, 2011; Agyemang, 2017; Andrew et al., 2022). Thus, the transformation from water to land transportation in Samarinda can also be understood as a change in mobility behavior triggered by the availability of new connecting infrastructure and increased travel efficiency.

Drawing on John Dewey's theory of progressivism, human beings continually learn from experience in order to develop and advance (Mustaghfiroh, 2020). In this context, people who had long depended on water transportation—such as tambangan boats, klotok, gubang, and jukung that once lined the banks of the Mahakam River waiting for passengers to cross—gradually shifted to land transportation that was faster and more efficient. The decline in river-transport passengers reduced the income earned by operators of tambangan, klotok, and other watercraft on the Mahakam River. From Adam Smith's supply-and-demand perspective, the price and viability of a good or service in a free market are determined by the interaction

between supply from producers and demand from consumers (Meiriza et al., 2023). When fewer passengers wished to use water transportation to cross to or from Samarinda Seberang, the number of actors engaged in this river-transport business also declined. Therefore, modal transformation in Samarinda should be understood not only as a sign of technological progress, but also as a change in the structure of accessibility and urban travel preferences, while the remaining river transportation tended to survive only in functions not yet fully replaceable by land modes (Banister, 2008; Hidayat et al., 2022; Calderón-Rivera et al., 2024).

The Mahakam Bridge, which connected Samarinda Seberang and Samarinda City, was inaugurated by President Soeharto and began operating in 1984. From that point, interest in river transportation began to decline. In addition, the Balikpapan terminal, which had originally been located in Samarinda Seberang, was relocated to Sungai Kunjang. Against this background, this study focuses on how the transformation from water to land transportation took place in the Municipality of Samarinda during 1980–1998.

Method

This study employs the historical method. According to Sukmana (2021), the historical method consists of four stages: heuristics, external and internal criticism, interpretation, and historiography. First, heuristics is the initial stage of historical research and refers to the collection of data through the search for and gathering of historical sources. In general, historical sources are divided into primary and secondary sources; in practice, the heuristic process is not fundamentally different from other bibliographic activities. Second, source criticism involves assessing whether the collected data are authentic and trustworthy. At this stage, the researcher collected written sources such as books and also conducted interviews with key informants. Third, the researcher compared interview results with available documents. The facts obtained were then interpreted in the form of critical historical writing. Fourth, historiography constitutes the final stage of historical writing, which pays attention to chronology, causality, and the ordering of events. In preparing the historiography, interpretive imagination was required to connect the facts to the topic of the transformation from water to land transportation in the Municipality of Samarinda (1980–1998).

Results and Discussion

The Law of the Republic of Indonesia on the Principles of Regional Government was an important legal instrument regulating regional administration in Indonesia. This law changed Samarinda's governmental status from Kota Praja to Kota Madya. After the law came into effect, the Municipality of Samarinda possessed its own governmental system and autonomous regional authority, with the mayor serving as the highest local leader.

One of the first priorities in the expansion of the Municipality of Samarinda was the construction of transportation infrastructure in the form of roads, both within the city and between Samarinda and Balikpapan as well as Tenggarong. Roads were also built to connect Samarinda with the LNG and fertilizer industrial centers in Bontang. Rapid economic development encouraged the provision of facilities and infrastructure to support economic activity. The Pinang Babaris shopping complex was completed in 1971, followed by the construction of the Segiri central market in 1978 as a replacement for the older Pasar Pagi market.

Another important development in Samarinda concerned transportation. Transportation serves human life by facilitating the movement of people and goods from one place to another. It also functions as a support for development by serving and expanding activities in other sectors, including agriculture, industry, trade, education, health, tourism, and public transport. Before the Mahakam Bridge connected Samarinda City and Samarinda Seberang, people relied on water transportation for crossing. This was marked by the existence of the Sungai Kunjang ferry, which in its time functioned as an important link for people entering and leaving Samarinda.

Figure 1. One of the abandoned ferry boats
Source: Azhar Aza YouTube channel (accessed 1 August 2025).

In addition to the government-provided Sungai Kunjang ferry, there were also community-based water transportation services from Samarinda Seberang that served as alternatives for crossing the Mahakam River. These included tambangan boats and klotok, among the oldest forms of public transportation in Samarinda, which had already existed since the 1970s in the areas of Samarinda City and Samarinda Seberang, especially near the Banjarmasin and Balikpapan bus terminals.

Figure 2. Klotok boat
Source: Personal documentation (taken 20 July 2025).

A klotok is a medium-sized boat with a larger carrying capacity than a tambangan. It emerged as an alternative because the tambangan had appeared earlier than the klotok. A klotok could reach approximately twelve meters in length. Its form varied according to function. When used for passenger transport, interior space and seating were expanded, and some boats even had two decks so that passengers could enjoy views from the Mahakam River. By contrast, when used for carrying goods or materials such as coal or timber, cargo space was enlarged to accommodate more freight.

By the 1980s, the tambangan had grown to about ten meters in length and two meters in width. Its relatively large size allowed it to carry passengers. The boat also became more durable because thick iron plates were added at the bow and stern. Instead of nails, the structural joints were fastened with bolts weighing up to two kilograms. During this period, tambangan boats were also fitted with roofs to provide protection from sun and rain, and they were equipped with engines mounted at the rear.

Figure 3. Tambangan boat

Source: Personal documentation (taken 20 July 2025).

Klotok boats also began operating in the 1980s. Equipped with larger engines and wider hulls than tambangan boats, they created competition in river-transport services. To ensure that all operators received turns fairly, a two-to-one system was introduced: tambangan boats were allowed to take passengers twice, while klotok boats were allowed only once. Klotok boats were also permitted to take passengers at different docks, such as Samarinda Ilir and Samarinda Seberang, whereas tambangan boats could take passengers from only one dock. Finally, tambangan boats could operate for twenty-four hours, while klotok boats operated only from seven in the morning until six in the evening.

By the 1990s, not much had changed; the tambangan that remained were mostly renovated versions of older boats because materials for building new ones, such as large solid timber, had become scarce, and skilled craftsmen capable of making tambangan were no longer readily available. Another factor was the activation of the G taxi route. One impact of declining river-transport passengers was the separation of the Balikpapan and Banjarmasin terminals, which made the river docks increasingly quiet. By the late 1990s, especially during the 1998 monetary crisis, many people had begun to leave water transportation and shift to land transportation, whose routes were considered safer and faster because of the Mahakam Bridge and land-based services such as angkot. Even so, water transportation had not completely disappeared; it continued to survive amid the pressure of increasingly modern modes of transport.

Samarinda is a city physically divided by the Mahakam River. The central urban area (often referred to as Samarinda City) and the area across the river (Samarinda Seberang) developed at different rates. Before adequate land infrastructure was available, crossings depended on tambangan boats, klotok, or ferries, all of which required time and had limited capacity. The construction of an iconic bridge such as the Mahakam Bridge drastically altered this dynamic. Smooth land connectivity made the movement of people and goods much faster and more efficient. Residents of Samarinda Seberang could then more easily access government offices, businesses, educational institutions, and health facilities in the city center, and vice versa. This integration united the two areas into a more cohesive urban entity. For businesses and ordinary residents alike, time is money. The shift to land transportation offered a speed that water transportation could not match for moving passengers and goods on a small to medium scale. This pattern of development toward greater efficiency is consistent with progressivist theory. These findings are in line with literature showing that new transport infrastructure can trigger modal shifts, expand the reach of daily activities, and promote the integration of urban space previously constrained by physical barriers such as rivers (Heinen et al., 2017; Banister, 2008).

This shift also affected the economic structure of water-transport providers such as tambangan and klotok operators, many of whom lost their livelihoods. On the other hand, the public gained access that was faster, cheaper, and more predictable. Thus, the change in transportation modes was not merely a technical change, but also a socio-economic transformation that affected urban spatial patterns, mobility patterns, and the economic relations of Samarinda society. From a transport-policy perspective, this condition also confirms that river transport, once no longer dominant, requires a repositioning of function—for example, as a complementary mode, a connector for specific areas, or part of an integrated transportation system—in order to remain relevant amid the dominance of land transportation (Saida, 2015; Hidayat et al., 2022).

These findings also accord with transportation literature emphasizing that infrastructure investment does not merely alter accessibility, but also reshapes travel preferences, the distribution of mobility benefits, and the structure of transport services. In many cases, new modes or more efficient networks attract users because they reduce travel time, expand access, and create perceptions of better service, although their effects on former user groups are often uneven (Abrantes, 2015; Bueno Cadena et al., 2016; Gross et al., 2021; Mwesigwa et al., 2024). In Samarinda, this condition can be seen in the declining dependence of residents on tambangan, klotok, and ferries after land connectivity became more stable.

Conclusion

Water transportation is one of the oldest forms of public transport that has survived to the present. At the beginning of its development, it was urgently needed by the people of Samarinda, especially because the region was divided by the Mahakam River and had not yet been connected by adequate land infrastructure.

As transportation use shifted and was even replaced alongside the growth and development of Samarinda, this change was closely related to the construction of the Mahakam Bridge, the development of land-transport technology, and the public's need for modes that were faster and more efficient. This transformation reduced the use of traditional water transportation and affected the income of tambangan and klotok operators. Thus, the change shows that the development of land infrastructure did not merely shorten travel time, but also reshaped the hierarchy of transportation modes in a river city such as Samarinda (Sitorus et al., 2016; Heinen et al., 2017).

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