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Legacy and transformation: The enduring socioeconomic impact of Colonial railway infrastructure in contemporary Bogor

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ABSTRACT

This study aims to historically examine the construction of the Bogor–Jakarta railway line during the Dutch colonial period between 1900 and 1930 and its impact on the socio-economic transformation of the local community. Utilizing a historical methodology encompassing heuristics, source criticism, interpretation, and historiography, the research draws on secondary literature and colonial archival records as its primary sources. The findings reveal that the railway's development was driven not only by economic interests in plantation logistics but also by military and administrative objectives to exert control over colonial territories. The railway functioned as a critical infrastructure for commodity export while also enhancing territorial connectivity, yet it simultaneously reinforced social disparities between the colonial elites and the indigenous population. The analysis demonstrates that, although the railway system improved the efficiency of people and goods mobility, it also operated as a tool of exclusion, discrimination, and centralized control. It accelerated regional economic growth but marginalized local participation in the developmental process. The study concludes that colonial infrastructure, such as the Bogor–Jakarta railway, represents an ambivalent legacy: it facilitated modernization while perpetuating inequality. This research contributes an interdisciplinary perspective that combines historical analysis with local economic development insights, offering a comprehensive understanding of how colonial transportation systems continue to influence mobility patterns and economic structures in the present day. It also provides a reflective basis for formulating transportation policies that are inclusive and historically informed.

Contribution: By combining historical methodology with local economic development insights, the study offers a nuanced understanding of how colonial transportation infrastructure shaped socio-economic transformations and mobility patterns.

1. INTRODUCTION

During the implementation of the liberal economic system, the Dutch East Indies government invested heavily in infrastructure development. In addition to irrigation facilities, the colonial government also built a large railway network. The Dutch railway network on the islands of Java and Sumatra reached a length of 6,500 km. The first railway line built by the Dutch was between Semarang and the Sultanate, but also between Batavia and Bogor. Construction was completed in 1873 and was primarily intended to open up parts of Java. Railway development on Java was primarily driven by economic decisions, particularly the interests of large plantations (Afrianti et al., 2022).

Furthermore, Indonesia's diverse geography also requires appropriate supporting transportation infrastructure. The transportation sector aims to facilitate mobility and shorten travel time, including airplanes, ships, buses, cars, motorcycles, and so on. One example of land transportation is trains, a mass public transportation system with several advantages and high public demand (Biomantara & Herdiansyah, 2019). Trains are a widely used mode of mass transportation. The presence of trains in Indonesia makes it easier for people to travel, both long and short distances. The development of railways in Indonesia is inseparable from the influence of Dutch colonialism in Indonesia (Fauzi & Alais Muhamadan, 2020).

At that time, connecting roads were generally also provided by land, albeit via dirt roads and even footpaths. Overland travel at that time could take up to two days, averaging 8.5 hours a day. Changes in land transportation progressed rapidly, in line with the increasing production of West Java's plantations, especially coffee. The coffee harvest produced quite abundant yields, necessitating fast transportation to quickly reach the port warehouses in Jakarta (Suhartono & Padmo, 1983).

The Dutch arrived not only bringing disaster but also bringing railways. Starting in 1863, through the private Dutch satellite company Indische Spoorweg Maatschappij (NISM), two railway lines were built in Central Java and West Java, from Buitenzorg (Bogor) to Batavia (Jakarta). Five years later, train testing on this route began. The railway was not ready for operation until 1873, after the railway construction in West Java was completed (Tempo.co, 1999). Before its operation, there was competition between the Dutch East Indies government and the private sector over who should manage mass transportation. However, the Dutch business sector lost because of its weak lobbying within the Kingdom of the Netherlands. In 1875, the Dutch state-owned company Staatsspoorwegen (SS) was transferred to manage the railways on the island of Java.

The Dutch government's rationale for building railway infrastructure was as if colonialism would continue in the colonies forever. Militarism and economics were the primary reasons for the construction of the road network and railway stations (Rodríguez, 2023). Given the crucial role of railways, the development and improvement of key infrastructure, crucial for the success of the railway transportation system, was necessary. The existence of the railway mode began with the construction of railway lines during the Dutch colonial period over 150 years ago. The primary purpose of the railway construction and the provision of rail transport was to facilitate the transportation of agricultural products from the interior to ports, allowing for cross-border trade (Van Laak, 2023).

The presence of this rail transportation mode in Indonesia was motivated by the need for faster and more effective transportation to support the smooth production and transportation of plantation products from Buitenzorg to Batavia (Jakarta-Bogor) and to Europe via Sunda Kelapa Port which was later converted into passenger transportation. The Dutch East Indies government chose rail, because it was considered faster and more effective than land transportation (Jumardi et al., 2020). Therefore, the Dutch East Indies government entrusted the construction of the Batavia-Buitenzorg railway line to the private company Nederlandsche-Indische Spoorweg Maatschappij (NISM), which was considered successful in building the Samarang-Tanggungharjo railway line in 1864-1867.

This factor was one of the factors that later encouraged the presence of railways in Bogor. The operation of railway transportation is inseparable from the existence of infrastructure development. Furthermore, infrastructure development has an impact on economic development and social change in the region. This network layer began with the construction of railway lines, which brought industrial and economic progress in the area to office buildings (Muthmainnah et al., 2020). By understanding infrastructure as part of the city's

agro-industrial network layer, we can understand the characteristics of the city's existing space. Based on this, researchers are interested in examining in more depth the lives of the Bogor community, particularly the plantation communities whose areas are frequently crossed by railway lines and the communities in Bogor who use railways as an economic engine to facilitate the distribution of plantation products.

This literature review was conducted to avoid duplication of existing work. The authors conducted a search and information extraction on the research problem from existing data, then developed it. Research on the role of railways in agriculture and trade in West Java has been rarely discussed. According to (Nurcahya et al., 2025), railway operations in Indonesia have not played a significant role in the development of transportation and public mobility since the Dutch colonial era. The railway network, initially built to support the plantation sector and military needs, gradually developed into a vital means of connecting large and small cities and accelerating the movement of people and goods.

In West Java, construction of a railway line began connecting Batavia-Buitenzorg (Jakarta-Bogor). From Bogor, the railway line continued to connect Sukabumi, Cianjur, and Bandung (Lasmiyati, 2017). The construction of the railway line connecting Bogor-Sukabumi-Bandung was accompanied by the construction of emplacements such as stations, platforms, and passenger waiting rooms.

In fact, according to (Hermawan, 2014) the intensive development of the railway network by the Dutch colonial government since the mid-19th century was aimed at economic interests. Along the way, this means of transportation was also developed to support the defense system. Smooth communication and transportation were essential to support troop mobility during wartime. The railway was also expected to provide a means of transportation for civilian refugees and government leaders to relatively safer and more secure locations.

The author's research is expected to provide both theoretical and practical benefits, as well as to contribute to the body of knowledge for both the author and the wider community. The results of this study can serve as a basis for developing insights into the history of railway transportation. Furthermore, it will add value to the wealth of knowledge in the field of Indonesian history, particularly regarding public mobility by rail. Overall, the results of this study can serve as an additional reference in studying history, particularly the history of transportation, specifically railways. For the author, the results of this study can serve as a reference for further research if there are still shortcomings due to limited resources and the author's understanding.

2. METHOD

This research was conducted in three stages: source collection and presentation of the analysis results. Library research was used to collect data from libraries (Connaway & Radford, 2021). This technique does not require direct fieldwork to locate data sources, but rather involves searching, collecting, and reviewing books, journals, and articles in research repositories, namely libraries. Sources, of course, include notes and other facts that provide a general overview of events. Because an honest historiangenerate data and explain where the data comes from. Therefore, the subjectivity of historiography is acknowledged but avoided.

Furthermore, interpretation is a step or activity that involves interpreting facts and determining the meaning and context of the facts obtained. Interpretation is often called subjectivity. An honest historianwill create dates and descriptions of where those dates come from. Others can look back and verify. Therefore, the subjectivity of historiography is acknowledged but avoided. There are two types of interpretation: analysis and synthesis. Analysis means deciphering. Sometimes a source contains several possibilities. This is because transportation in Indonesia plays a very important role in the foundations of community life. Along with the times, transportation technology has experienced quite rapid progress. This is beneficial for the community in obtaining efficient modes of mass transportation (Dwiatmoko et al., 2020). Transportation is a crucial element in a country's development, where it is one of the foundations of economic and social development, as well as the growth of industrialization.

Synthesis means uniting. The development of the Industrial Revolution in the 18th century also had a major impact on the development of transportation technology. Most people around the world need transportation to facilitate their work. One transportation technology that has experienced development is the train. Because railway transportation in Indonesia, especially in Bogor and its surroundings, is part of the journey of life. Since its emergence in the latter half of the 19th century until now, trains have been a

vital and important means of transportation, both for the interests of the government and the community (Tim, 1997).

Historiography is the final stage of historical research after going through heuristics, source criticism, and interpretation. Historiography is the process of compiling facts from various sources, selected in the form of historical writing. After examining the existing data, historians must consider the structure and style of writing. Historians must be conscious and try to allow others to understand the reasons put forward (Claus & Marriott, 2014). It is at this final stage that historical writing takes place. This is the stage where a historian writes the results of the interpretation of a past event or incident. Or the stage of writing the results of the interpretation of facts and attempts to reconstruct the past to provide answers to the problems formulated above. Imaginative reconstruction of the past based on data obtained through a process of critical testing and analysis.

3. RESULTS AND DISCUSSION

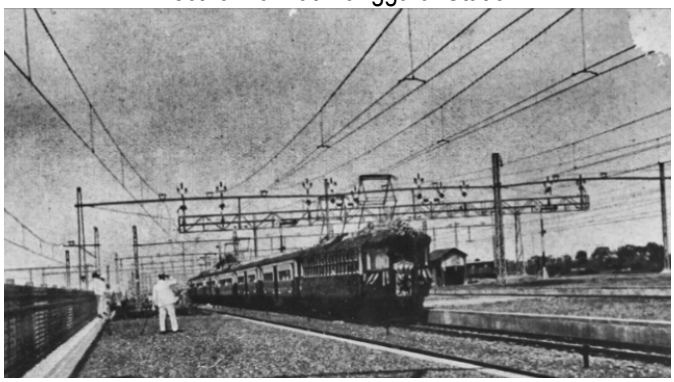
Because increasingly modern transportation infrastructure in society that connects villages with villages and cities, or cities with other cities is one of the drivers of community mobility (Subekti, 2020). With the availability of infrastructure, many people from villages travel to other villages or to cities and vice versa quickly and easily. The opening of railway lines was part of the colonial plan in infrastructure and transportation development. The understanding of transportation is emphasized on the activities carried out to move certain products or goods from one place to another using the possible means, in this case trains (Wardojo, 2018).

Bogor-Jakarta line development

In its construction, the Batavia-Buitenzorg railway was carried out in three sections, namely (1) Batavia with a length of 9,270 m; (2) Mister Cornellis (Jatinegara) with a length of 20,892 m; (3) Buitenzorg with a length of 28,344 m. Construction in all sections was carried out simultaneously, but for various reasons, the construction of the line was finally built in waves and opened to the public also in waves (Hermawan, 2014). Since 1913, the state railway company Staatspoor-en Tramwegen began to control the entire railway network in Batavia and Meester Cornelis. Since then, SS began to carry out comprehensive arrangements for railway facilities and infrastructure in the two municipalities. For example, by building a new connecting line connecting the new Manggarai Station with Jatinegara Station. The construction of this new connecting line is intended to replace the old connecting line of Tanah Abang Station-Menteng-Salemba-Kramat Station which intersects with the Jakarta-Bogor railway line and intersects with the Matraman highway.

In 1917, Ir. P.A. Roelofsen was tasked with conducting research on water sources that could be used to generate electricity, which would power electric trains. Furthermore, the Dutch East Indies had abundant water resources that could be used for electricity. Furthermore, with the electric train, the number of employees could be reduced by 6%. Based on Roelofsen's research, considerations from Ir. J.N. van Der Ley, and supported by the Council of the Indies, the government agreed to build a hydroelectric power plant (PLTA).

Figure 7
Electric Train at Manggarai Station



Source: Khastara National Library of the Republic of Indonesia

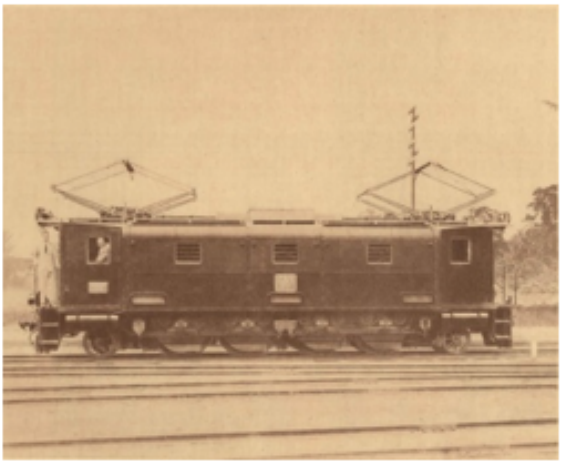
In 1919, the construction of a Hydroelectric Power Plant began in Cicacih (Tjitjateh) which was later known as the Ubrug (Oebroeg) and Ciantan (Tjianten) Hydroelectric Power Plants, which were then called the Kracak (Kratjak) Hydroelectric Power Plants. According to the plan, electricity was distributed by high-voltage transmission to the Main Substation (Onderstation) built in the Buitenzorg, Depok, Meester Cornelis (Jatinegara), and Ancol units. The Main Substation functioned to convert the electric current from the 6.000 volt AC (alternating current) power plant to 1,500 volt DC/direct current (Setiawan, 2021). In addition, the electric train network only existed in Batavia (Jakarta) to Buitenzorg (Bogor) which was built in 1918 (Santoso et al., 2015). Towards the completion of the Hydroelectric Power Plant construction, Dr. Ir. In August 1920, G. De Gelder arrived in the Dutch East Indies to install the electricity network. The SS Plan was underway, and the hydroelectric power plant was largely complete. However, major changes had occurred, leading to a global malaise. This situation in the Netherlands also had consequences for the royal government. It was difficult for the Dutch to raise sufficient capital. As a result, the implementation of the plan was prolonged (Gani, 1978).

Figure 8
Electric Train Line in Bogor

Source: KITLV 40455

An electrical network was also built from Meester Cornelis (Jatinegara) to Tanjung Priok. By 1928, electric locomotives and electric trains could be used (Laksana et al., 2015). By 1928, there were 13 electric locomotives in operation. Electricity for passenger trains came from the state-owned electricity company, Kereta Api Negara (National Railway Company). The electricity was converted from 6,000 volts of rotating current to 1,500 volts of direct current (DC). Power plants were built in Ancol, Jatinegara, Depok, and then Bogor, to run electric locomotives and electric trains. Electric locomotives and electric trains moved around the Batavia line and then crossed Manggarai-Buitenzorg.

Figure 9
The first electric locomotive



Source: Book of Warnings from the Staatsspoor- En Tramwegen in the Dutch East Indies 1875-1925

In the 1930s, electric trains also began operating in Batavia, serving passengers as far as Bogor. Unlike commuter trains, which have their own propulsion system, locomotives were solely used as towing vehicles. Several passenger cars were attached to the locomotives. At least five electric locomotives existed at the time, including the 3000, 3100, 3200, and 3300 series. These locomotives had driver's cabins on both sides. The presence of electric locomotives in Batavia in 1930 even predated those in the Netherlands (Prasodjo, 2019).

Railway infrastructure development in Bogor

The Bogor-Jakarta railway line was built between 1880 and 1894. The train provided an efficient means of transporting passengers and agricultural products. Because the route traversed many deep river valleys and steep mountain slopes, infrastructure development was necessary. In addition to a single-track track, double-track tracks were constructed in several locations, with several stations. Double-track tracks allowed two trains traveling in opposite directions to pass each other (Raap, 2017). Furthermore, the proliferation of railway operators led to the development of numerous railway facilities and infrastructure. Railway infrastructure includes railway lines, stations, and railway operating facilities to enable train operation (Hendrawan, 2018). It's worth considering that road infrastructure is a non-negotiable necessity, allowing us to develop various types of integrated agriculture, not only with agriculture but also with livestock (Damardono, 2005).

A train station is a transit point or final stop on a train journey. The railway network facilitates the placement of train stations in the cities it passes through. The most common location for train stations is in the city center, allowing easy access for passengers from all over the city (Handinoto, 1999). During the Dutch East Indies era, train stations served as locations for various railway activities, such as passenger stops, military transportation, and temporary storage for plantation products. Trains were the primary mode of transportation in the Dutch East Indies at that time. This was because trains were the primary mode of transportation for transporting plantation products. Trains became the primary mode of transportation in the Dutch East Indies at that time. This was because trains had become a modern means of transportation for transporting plantation products, which initially used carts. In addition to transporting plantation products, trains were also popular because they were more efficient and comfortable for traveling medium to long distances.

Figure 10
Bogor Station

Source: KITLV 19210

Bogor Station was the starting point for the railway construction project in Priangan. This station was originally built by NIS, a private railway company during the Dutch East Indies era, to serve the journey from Batavia to Buitenzorg and vice versa (Wirawan, 2020). Bogor Station was formerly only the final terminal for the Batavia to Buitenzorg railway line (the name of the city of Bogor at that time), built by the Dutch East Indies government through the SS railway company and operated from 1872. It was not until 1881 that the Bogor Station building was constructed to accommodate the increasing number of passengers. In addition, to ensure the smooth running of economic, social, and political activities, colonial cities in the Dutch East Indies had to be designed accordingly. Public facilities, city infrastructure such as roads, drainage, irrigation, and transportation had to function properly (Ganjar, 2021). In 1917, the Dutch government improved railway services by electrifying the city until by 1930 electrification was completed at Bogor station (Harto, 2015).

Figure 11
Empang Bogor Bridge

Source: KITLV 1401526

Furthermore, railway construction areas do not always follow flat contours. Railroads often require crossing valleys, rivers, and ravines. Therefore, railroad embankments and bridges are required to be adapted to the depth of the ravine or valley being crossed. In calculating bridge strength, engineers must be able to estimate the axle pressure of new locomotives, which will continue to increase annually. Bridges on highways must be stronger than bridges crossing branch lines or tramways because of the higher frequency of travel and the type of locomotives used, which are usually heavier and have longer trains. Bridge construction also adapts to the characteristics of the river or basin below. Railway bridges that cross rivers in lowlands where the water level is not too high from the rails are often walled bridges. This means that the rail bridge uses a basic steel structure pattern composed of interconnected triangular crossbars that enclose the railway track (Mariadi, 2015).

This bridge was built by the Staatsspoorwegen (SS) between 1881 and 1882, when the SS was constructing a railway line connecting Bogor and Cicalengka via Sukabumi, Cianjur, Padalarang, and Bandung. The bridge was officially used, coinciding with the line's inauguration on September 10, 1884. The line is flanked by two mountains: Mount Pangrango and Mount Salak. This hilly terrain undoubtedly made the railway construction challenging. Many bridges had to be built, and the track had to wind up and down (Rachmawati, 2020). Railway construction required a large workforce, from manual labor to skilled labor. These manual laborers included laborers who performed physical labor, such as porters. Physical labor was generally performed by indigenous people. Geographical factors influenced the workforce. The need for labor was very high (Mulyana, 2018).

Local economic development

In the context of local economic development, public transportation modes such as trains play a crucial role in supporting community mobility, labor distribution, and the circulation of economic activity between regions. One form of passenger transportation that has made a significant contribution since the colonial era is the train. Although official records do not indicate the exact date when trains were first used to transport passengers in Indonesia, historical evidence suggests that since the opening of the Semarang–Solo line in February 1870, trains have functioned as a means of transporting people, not just goods. The existence of passenger fare regulations and data on the number of train users during the same year are early indicators that socio-economic relations through this mode have been established and grown on a significant scale since the end of the 19th century (Kusumawardhani, 2017).

However, this development was not necessarily inclusive. Between 1846 and 1930, the railway system in the Dutch East Indies still discriminated against indigenous people, who constituted the majority of passengers. (Setyaningsih, 2018) noted the criminalization and marginalization of indigenous groups who used railway services, both in terms of service and enforcement. This inequality not only reflected the dominance of colonial power in controlling infrastructure but also demonstrated how public transportation could become an arena for social conflict and a symbol of class hierarchy. Behind the railways connecting major cities in Java, there lay an

unequal social reality that ultimately shaped the structure of power relations between colonial rulers and local people.

Over time, trains have become an integral part of Indonesian life, particularly in urban areas and on interprovincial routes. Vintage documentary images showing people waiting at Depok Station, as recorded in the KITLV archives of 141900, serve as important visual markers demonstrating the social closeness of residents to this mode of transportation. Moments such as the Eid homecoming (mudik) are also among the most prominent moments in the history of mass train use. The mudik tradition, closely linked to the social and cultural ties of Indonesian society, is supported by this mode because it is considered more efficient, both in terms of time and cost, when compared to other land transportation such as buses or private cars.

Figure 12
People waiting at Depok Station

Source: KITLV 141900

However, this doesn't mean that the experience of being a train passenger is always pleasant. (Eneste, 2003) notes that during the dense homecoming traffic, the risk of losing personal belongings often occurs, reflecting ongoing challenges in terms of passenger comfort and safety. However, in general, trains are still considered a relatively safe, fast, and congestion-free mode of transportation. These characteristics are a plus, especially in the context of the high mobility that is characteristic of urban communities and urban buffer zones. (Warpanji, 2012) even emphasized that the presence of trains is one of the most effective ways to reduce traffic accidents, especially during times of high travel intensity such as long holidays or religious holidays.

From a local economic perspective, railways are not just a means of transportation, but also infrastructure that connects centers of economic activity (Jalolova et al., 2022). When railways reach previously isolated areas, people's access to markets, public services, and employment opportunities improves. Daily travel from the suburbs to business centers becomes possible without the need for permanent migration. This means that railways support the formation of a more dynamic and inclusive regional economic ecosystem. High mobility allows rural or suburban residents to participate in urban economic activities while remaining in and spending their income in their hometowns. This cycle, if maintained consistently, can strengthen the local economic base and prevent economic concentration in the city center (Alotaibi et al., 2022).

On the other hand, the government's modernization and electrification of railway lines in recent decades has also opened up new economic opportunities. For example, the construction of modern stations and transit-oriented development (TOD) areas around major stations has spurred business and property growth. Areas previously considered less promising have suddenly become new economic hubs thanks to their connections to efficient mass transportation systems. MSMEs, the service sector, and informal traders have benefited from the increased traffic in these areas. This pattern demonstrates that rail-based passenger transportation not only moves people but also flows capital and economic opportunities between regions (Syafruddin, 2024).

Furthermore, the role of railways in local economic development can also be seen in the knock-on impact on other sectors, such as tourism, logistics, and hospitality. Many regions now use train stations as starting points for tourist trips. Legendary routes like Bandung–Yogyakarta or Surabaya–Banyuwangi have become favorites for tourists due to their natural scenery and easy access. Local economic activity is also booming, with everything from tour guides and local cuisine to traditional guesthouses. In this context, railways are not

only infrastructure but also part of a cultural experience that enriches interactions between local residents and tourists (Lunardon et al., 2023).

However, to make railways a primary driver of local economic development, policies that support the interests of the wider community are needed. For example, affordable fares and consistent travel schedules must be maintained, so that they are not only enjoyed by the upper middle class. Furthermore, integration of transportation modes such as trains, public transportation, and online transportation is crucial to ensure efficient public mobility and prevent congestion at transit points. The government must also ensure that railway infrastructure development does not displace the urban poor or eliminate small traders near stations. Instead, the project should open up space for participation and empower them as part of the local economic ecosystem.

Historically, the shift in public perception of trains is also crucial. While this mode of transportation was once synonymous with colonial exclusivity or a rigid social class system, trains have now become a symbol of egalitarian and modern public transportation. This infrastructure transformation is inseparable from post-reform improvements, including service, facilities, and management. PT Kereta Api Indonesia (KAI), as a state-owned enterprise, has also played a crucial role in revitalizing Indonesia's railways, thereby regaining public trust. This success demonstrates that, with professional management and a commitment to public service, rail-based passenger transportation can become the backbone of the national mobility system and drive equitable local economic growth (Mishra & Mishra, 2021).

Sociologically, the existence of trains has also created new patterns of relationships within society. Interclass encounters, cross-cultural interactions, and the creation of new social networks within the train's movement space are social experiences rarely found in private modes of transportation. In fact, in many folktales and popular literature, trains often serve as the backdrop for important events involving changes in fate, meetings, or separations. This demonstrates that the role of trains in people's lives is not only functional, but also symbolic and cultural. It is therefore not surprising that the construction and development of this mode of transportation consistently attracts public attention, not only from a technical perspective but also from a social and emotional perspective (Valaskivi, 2022).

Within the framework of sustainable development, rail also offers a relatively environmentally friendly solution compared to other fossil-fuel-based transportation. Lower emissions, high energy efficiency, and large carrying capacity make rail an ideal choice for the future of transportation. Therefore, integrating rail into regional spatial planning and local economic development is a strategic step in line with global commitments to reducing carbon emissions and improving people's quality of life. This approach will strengthen regional connectivity while supporting equitable and inclusive economic growth.

It's unclear exactly when trains began to be used to transport people. However, since the opening of the Semarang-Solo line in February 1870, trains have also been used as a means of transportation. This is evidenced by the existence of passenger fare regulations and data on the number of passengers carried during the 1870s. In the kingdom, from 1846 to 1930, discrimination and criminalization against indigenous people, the majority of passengers, continued (Setyaningsih, 2018).

In addition to serving the mobility needs of the population, the railway was also designed from the outset to support colonial economic interests, particularly in the transportation of plantation products. During the VOC era, the Bogor region was known as a key center for export commodity production. Its favorable soil and climate made the region fertile ground for various commodity crops such as coffee, sugar cane, and tobacco. According to (Gustaman, 2019), the increase in the number of plantations in the region was directly proportional to the increase in the quality of production, which was able to penetrate the international market. However, behind the promising export boom, there were structural inequalities that cannot be ignored: the commodity trade and distribution system tended to be monopolized by European groups with strong capital and well-organized trading networks (Andaya, 2002).

This situation made the transportation system a strategic key to economic control. In the era before the construction of modern road networks, transportation was still heavily dependent on river routes and inadequate land routes. The rivers in the Bogor region played a crucial role as primary distribution routes, although they were highly dependent on the seasons and water levels. In an effort to streamline the distribution of plantation products to port cities like Batavia, the construction of railways became the answer to increasingly complex and speedy logistical needs. The construction of these railways was driven not only by considerations of efficient freight transport but also by the desire for territorial control. Areas deemed prone to unrest or isolated were deliberately connected by rail networks to facilitate military and administrative control by the colonial government.

From a technical perspective, the choice of trains as a mode of transport for plantation products was very rational. As explained by (Hermawan, 2021), European experience demonstrated that trains could address the challenges of transporting large quantities of goods that traditional modes of transportation, such as bullock carts, could not handle. A single train could carry dozens of times the volume of commodities compared to non-mechanical land transport. This significantly impacted the time and cost efficiency of distributing plantation products to ports, where they would then be shipped to international markets. In this context, trains became part of the colonial political-economic system, which relied heavily on export commodities.

The construction of a railway line from Batavia to the agricultural and plantation areas in the interior of West Java was also a priority. The city of Bogor, with its strategic location and proximity to major plantation areas, served as a logistics hub to support the rail network's construction. All equipment needed for the railway line's construction was assembled and stored in Bogor. A key figure in this development was General David Maarschalk, who was appointed inspector and chief officer of the Sukabumi line (Herwana, 2012). This appointment demonstrated the project's importance to colonial economic and military strategy.

Before the railway system was established, coffee transport from the mountains of West Java to Batavia relied on heavy carts pulled by water buffalo (Sulistyani, 2022). This method was slow, highly dependent on road and weather conditions, and inefficient for long distances and large volumes. Therefore, railway infrastructure emerged as a solution to overcome logistical obstacles and expedite the flow of goods from upstream to downstream. Plantation products such as coffee, tea, sugar cane, and forest products like teak were the main commodities transported by rail across various agrarian regions. Not only did the railway speed up delivery, but it also allowed goods to be delivered in better condition due to the reduced risk of damage from the long journey.

However, it's important to note that the development of railways during this period did not necessarily bring equitable benefits to local communities. Although producing regions experienced increased connectivity, the economic benefits of this distribution system were largely enjoyed by the colonial elite and plantation owners. Local communities remained cheap labor, serving only as part of the production chain without access to the profits. Furthermore, railway construction was often carried out without considering the interests of local residents, both in terms of land evictions and the exclusive distribution of urban space. This makes railways a representation of systematically institutionalized inequality in access and exploitation of resources.

However, it cannot be ignored that the development of the railway network in this region also creates a knock-on effect *(spill-over effects)* which gradually contributed to changes in the social and economic structure of local communities (Ou et al., 2025). More open access to cities and markets, although initially intended only for the distribution of plantation products, ultimately provided new opportunities for residents around the railway line. Several community groups began to develop secondary economic activities such as trade, transportation services, accommodation, and other activities that took advantage of the movement of people and goods around the stations. At this point, the local economy began to shift from an agrarian-monoculture structure toward a more diversified service and trade economy.

This process was also closely related to the social dynamics in Batavia, the center of colonial administration. According to (Andika, 2017), in the 19th century, Batavia experienced a relatively calm process of social consolidation. In a relatively stable atmosphere, the urban community in Batavia began to peacefully form its cultural identity without much disruption from political dynamics. This contrast is particularly striking when compared to the 20th century, when mobility and economic growth became increasingly dynamic and stressful. In this social landscape, the role of the railway became increasingly vital, not only as a transporter of goods, but also as a cultural link, a trigger for social mobility, and a means of exchanging ideas.

Thus, it can be concluded that the transportation of plantation products via railway networks was a crucial foundation of the colonial economic structure, which subsequently underwent a functional transition within the context of local economic development. Although initially built for export and territorial control, these railway lines ultimately opened up access to the social and economic development of local communities in the surrounding areas. The primary challenge is how to transform these colonial-era railways into public assets that truly support the welfare of the community, rather than simply an instrument for distributing profits to a select few.

This historical experience also provides important lessons in the context of current transportation planning and economic development. Infrastructure, however robust and sophisticated, will have no meaningful impact without being accompanied by equitable and inclusive policies. Therefore, when discussing railway revitalization or the development of other modes of mass transportation, attention must be paid not only to

technical and economic aspects, but also to social, environmental, and spatial equity dimensions. In this way, the ideal of transportation-based local economic development will not be merely a development slogan, but will truly become a path to building humane connectivity.

4. CONCLUSION

This study reveals that the Bogor-Jakarta railway line, built during the Dutch colonial period, served not merely as a means of transportation but also as a strategic instrument in a major project of spatial and economic control. On the one hand, this railway played a crucial role in expediting the distribution of plantation products to export ports and opening access to previously isolated agrarian regions. On the other hand, the railway's construction and operation reflected an exploitative colonial power structure, in which local communities were often positioned as objects rather than subjects in the modernization process. This research addresses the fundamental question of how the Bogor–Jakarta railway contributed to economic and social transformation during the colonial period. By unraveling the historical traces of this railway, it reveals that railway infrastructure was not a neutral entity, but rather a medium of power that mediated relations between the colonial state, entrepreneurs, and local communities. While practically, the railway provided mobility and efficiency, structurally, it also reinforced long-standing inequalities. The primary contribution of this study lies in its success in highlighting the interconnectedness of colonial infrastructure and the formation of centralized local economies, as well as how this colonial legacy continues to influence spatial structures and societal mobility today. More than a mere historical reconstruction, this study opens up space for critical reflection on how we understand modern infrastructure and urges a historical approach to formulating equitable and sustainable development policies.

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