The land transportation network in Semarang City in the early 20th century

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Abstract. Semarang City is a fascinating city to be studied historically through various aspects, including transportation problems. This paper tries to examine the condition of the transportation network in Semarang at least in the first 30 years of the 20th century. The main problem in this paper is how the condition of the transportation network in Semarang and its impact on Semarang people in the early 20th century. So far, the concern about historical studies in Semarang regarding transportation has always been regarding the railway network centered in this city. However, the railway network is only connecting Semarang with other areas in Central Java and beyond. What about the transportation conditions in the city of Semarang itself? Of course, the train is not the primary mode if we talk about transportation mode inside the city. In the land transportation network in the big cities in the Dutch East Indies at the end of the 19th century, the mode of transportation using animal power played a huge role. However, changes began to occur when modern transportation modes, such as bicycles, motorbikes, cars, and trams, entered the Dutch East Indies, including Semarang City, at the beginning of the 20th century. The significant impact that occurs is that this mode of transportation provides a new network pattern in transportation, especially the land transportation network in Semarang. This study uses the historical method, which consists of four stages: heuristics, source criticism, interpretation, and historiography. The results of this study indicate that there are complex dynamics in the development of land transportation in Semarang, besides that technology plays an essential role in this development.

Keywords: Network, Transportation, Mode, Car, Train, Tram, Semarang, Colonial

1. Introduction

Semarang is one of Indonesia's cities, which is quite interesting to study from a historical perspective. This region has long been one of the important economic centers on the north coast of Central Java and in a broader context. One of the main aspects is its position in the middle of the northern part of Java Island. This strategic position also allows it to become a fairly busy port area. Whether viewed from the pre-colonial, colonial, and even post-independence era of Indonesia, Semarang is an important economic base in Java and Indonesia [1].

If investigated further, this area's reputation as a trading center can even be traced back to the 10th century when this area became one of the ports belonging to the Ancient Mataram Kingdom. In the next development, it was also famous for the arrival of Admiral Cheng-Ho around the 15th century. When the archipelago began to intersect with western powers, there were several areas controlled by the VOC, Jepara. However, given the unfavorable conditions to become a port, the VOC finally moved its center of power, including its military force to Semarang [2].

Since the VOC era, Semarang has developed into a city that is very thick with western nuances. Various kinds of buildings were built using European architecture (some of which were also the result of acculturation with Javanese and Chinese culture), including if we talk about this city's culture itself. The city of Semarang was then filled with European settlers who were concentrated in several places. Generally, they lived with various kinds of outstanding facilities and infrastructure built by the...
government (especially the city government) to serve them as high-class citizens in the Dutch East Indies.

There were many facilities and infrastructure built to serve the life of this upper-class society in general, such as proper housing, hospitals, houses of worship, offices, sports facilities, and the city's transportation network (in this regard, the land transportation network). The city's transportation network quite crucial, considering the need for transportation within the city was an important thing. Since motorized vehicles began to enter the Dutch East Indies in the early 20th century, the roads in several major cities began to be refined by being given asphalt. Asphalting this road is sole to serve European people who have vehicles disturbed by the existence of bad traditional roads, especially if the dry season comes in [3].

Semarang is basically an area divided into several regions according to society's structure, but for land transportation, everything is mixed. In the early 20th century, Semarang's streets were filled with luxury cars, city buses, trucks, and several traditional modes of transportation such as rickshaws and bicycles. There were three main roads in Semarang in the early 20th century, which formed a kind of triangle (Golden Triangle). This area is now the centre of Semarang, which is known as Jalan Pemuda, Jalan Pandanaran, and Jalan Karang Turi. Traffic in this region in the early 20th century was quite dense, considering that there were various centers of interest around the road, such as politics and economy[4]. However, the interesting about Semarang is the existence of a city tram network that had developed since the end of the 19th century until before the collapse of the Dutch East Indies government in 1940.

A region's transportation network's condition is critical because it relates to various aspects ranging from economic, social, to political aspects. One of the exciting things is if we refer to political in nature, such as the background of the construction of the Anyer-Panarukan post road, which facilitates communication between areas controlled by the Daendels government [5]. However, apart from these things, the transportation network is an essential element in regional integration, including small areas within cities. It is just that one of the main prerequisites to make this happen is that there must be significant infrastructure development, including the development of transportation modes. During the late 19th and early 20th centuries, such developments took place quite rapidly in the city of Semarang.

So far, research on the history of the transportation network in Semarang, especially during the colonial period, has only focused on physical development. Besides, Semarang City is better known as a port city, so that works related to transportation are more dominated by shipping [2,6,7]. However, there were some who then touched on the problem of land transportation, but basically, they only focused on the transportation network between regions in Java, which happened to have a center in Semarang, for example, the good trains carried out by NISM (Nederlandsch Indische Spoorweg Maatschappij), SJS (Semarang-Joana Stroomstram Maatschappij ), and SCS (Semarang-Cirebon Stoomstram Mij) [8–11]san. Most of them focus more on rail infrastructure, be it rail networks or related companies. Besides that, some discuss the highway network, but the discussion is also the same about big roads, which connect Semarang with other areas, for example, Jalan Pos, which also passes through the City of Semarang [5]. However, the city's land transportation network's talk is still relatively minimal, both talking about the road network and the tram network. This research will reveal the other side of the dynamics of land transportation that existed in the city of Semarang in the early 20th century. One thing that is interesting to discuss, besides revealing how the development of land transportation both facilities and infrastructure, this research also look at the extent of the intersection. That occurred between modern and traditional modes of transportation in Semarang in the early 20th century.

2. Method
This article use historical research methods in the analysis process [12,13]. This research method is divided into four stages: first, the heuristic process, this initial process is the process of collecting data.
Historical data that is quite valid are primary data from one era with the research's temporal scope. Besides, this research also use other relevant secondary sources, both monographs and research journals related to the theme. The second stage is the source criticism process, where all the data obtained are tested for correctness both internally (content truth) and externally (physical condition). The third stage is the interpretation process, where this process is the process of interpreting all the data selected to become a reference in this article. Moreover, the last is the historiography process; this process is the final writing process, where the structure of this paper refer to the "template" of writing articles on a predetermined one.

3. Result And Discussion

3.1. Geographical and Social Conditions of the City of Semarang in the Late 19th and Early 20th Century.

Semarang has been a prominent port city since the 18th century, mainly when the VOC controlled the area. Geographically, this area is located on the North Coast of Java. At first glance, Semarang's location, which is on the coast of the North Coast of Java, is beneficial for this region to grow into a large port city. The North Coast of Java tends to have calm and friendly seas for sailors. It is different from the typical areas in the south or the South Java coast, which tend to have fierce waves and coastal areas with coral cliffs. So that only a few coastal cities in the southern part of Java have developed into port cities [14].

Before becoming an important port city, the Semarang area was an excellent sedimentation area for several centuries. Based on some information related to the Semarang coast around the 15-16th century, the coastal area around the Simongan area, this information was found from Zheng He's fleet who had visited the Semarang area around the 15th century. However, due to sedimentation that occurs every year, Semarang's mainland area, especially the number that flow to the coast, was increasing with the year. Around the 19th century, the coastal area advanced to the Tanjung Mas Port area. Apart from the sedimentation brought by the mud, which then empties into Kali Garang, the silting of the sea on the north coast is also the reason why this land continues to grow [6,14,15].

As an important port city, the Semarang area has actually been a port since Majapahit controlled it. Besides, if you look at around the 15-16th century, other cities on the north coast of Java was more developed, such as Demak and Jepara, in line with Tome Pires' statement who visited Semarang in the 15th century who considered Semarang Harbor to be relatively small compared to other ports [6]. However, over the years, there was also silting in these two areas so that more ships were concentrated in the Semarang area. Mostly, the VOC controlled the Semarang area and became the center of VOC military and political power on the north coast. Semarang then grew to become an important economic center for the Dutch East Indies during the 19th century, where many large companies based in Semarang would emerge, one of which was rail transportation companies [16].

As a big city, Semarang also supported by the Hinterland region of Central Java, which is rich in natural resources, especially sugar in Vorstenlanden. These two areas are connected to the existing land transportation route. The slightly hilly contour of the southern part of Semarang makes the distribution of commodity goods quite long. This includes when traditional modes of transportation still dominate, such as carts, buggies, wagon, etc. This also applies to transportation within the city, although a good road network has existed since the mid-19th century in Semarang.

Apart from being an important area from an economic perspective, the Semarang region is also quite diverse in terms of ethnicity. Because of this position, Semarang was also inhabited by European, predominantly Dutch (who worked for the government, companies, and soldiers), Chinese (Tiong Hoa), and foreign easterners (Arabs and Indians). In relation to the Semarang residency (Semarang City, Salatiga, Kendal) in 1929, a significant number was found. Based on the 1930 census, Semarang's total population was 996,816, with the following details, namely: 16,982 European groups, 29,591 Chinese groups, 2,300 foreign eastern groups (including Arabs and Indians), and the
Bumiputera community of around 948,043 people. However, in Semarang the number is around 217,796 people, with details, namely: 12,587 Europeans, 27,423 Chinese, 2,329 East foreigners, and 175,457 Bumiputera people [17,18].

3.2. The Development of Road Transportation and Infrastructure in the City of Semarang in the End of the 19th Century and Early 20th Century.

The development in the city of Semarang was relatively rapid ahead of the turn of the 20th century. Apart from the increasing number of luxurious buildings with various functions ranging from hotels, offices to elite housing, Semarang has also seen significant developments in constructing land transportation networks. In addition to building a tram network that began operating in the mid-1880s, the government also added several highways in Semarang City as connecting infrastructure between regions, including the port area.

The first part that is interesting to discuss is the Old City of Semarang. This area has been built for a long time, but we can see that the planning process for constructing roads in the regions is entirely organized before we discuss a more extensive road network. The Old City of Semarang is indeed thick with European cultural nuances. In this area, several iconic buildings range from offices, shopping places, and courthouses to the most famous building in the area, the Blenduk Church, which was built several centuries earlier. However, unfortunately, this exclusive area is surrounded by a slum area, which is mostly occupied by the Bumiputra Semarang community [4].

The old town is surrounded by a fortress that forms a corner of a pentagon connected to several entrances. Each door access directs us to another area. On the west wall is located on the edge of Kali Semarang (river); around here, there is the Wester-walstraat road, which extends to Pakhuisstraat, which is now the Empu Tantular street. Then the road along the wall in the north, which is parallel to Jalan Stasiun Tawang, is named Norder-walstraat (now: Jalan Merak). Then on the eastern fort wall parallel to Ooster-walstraat or now known as Jalan Cendrawasih. Then the south wall is parallel to Zuider-walstraat or what is known today as Sendowo street. The nuances of European culture are very thick in the architecture in this region. Besides, in this city of Benteng there is also a series of orderly streets and have neat traffic. The walks are: de Here Stradt, de Bloem Stradt, and Van Der Burg Stradt [19].

**Figure 1.** One of the maps depicting the Old City of Semarang appears to be surrounded by a fort and pictures of the streets.

source: [www.gahetna.nl](http://www.gahetna.nl)

Outside the Kota Lama, the roads have also grown over the years, especially towards the 20th century. During this period, there was a significant development on roads outside the Old City. Semarang roads are relatively large or complete, especially connecting roads between other cities, such as in the south, which connect the Vorstenlanden areas. Usually, high-ranking officials were able to travel between the cities by bus. However, ordinary people could only travel on foot on the same
route. This is an indication that the construction of the road network is also not only intended for vehicles, but also for those traveling without using a vehicle or on foot [4]. Including the Anyer-Panarukan post road, which not only crosses the northern part of Semarang City but also has branches that cross into the city. For example, De Herenstaart is a road built in front of the Blenduk Church. This road is part of the Anyer-Panarukan post road that crosses Semarang's northern area [19].

One of the influential roads outside the Kota Lama area is Jalan Bojong or what is now known as Jalan Pemuda. This road passes from the southern region, namely from Wilhemina Plein or what is now known as the young monument area to the north around Poncol Station. Apart from the Old City of Semarang, it can be said that the area around Jalan Bojong is also essential for people's lives, especially the Dutch people. Along this road, many magnificent buildings were built to function as offices, one of which was the NIS (Nederlandsch Indische Maatschappij). The building owned by the railway company is now better known as the Lawang Sewu Building [4,18].

In the southern part of Jalan Bojong, the colonial government also built a new main road that connected along the southern part of Jalan Bojong towards the east. This road was named Pieter Sylthofflaan or what is now known as Jalan Pandanan. Then in the middle of Pieter Sylthofflaan road, a road also be built to connect Jalan Duwet. Now this road is called Jalan Gajah Mada. As you head east, Jalan Pieter Sylthofflaan will meet Jalan Randu that connects with the northern area. Interestingly, Jalan Bojong, Jalan Pieter Sylthofflan, and Jalan Randu seem to form a triangle. This area became known as the golden triangle (Segitiga Emas), considering that the areas connected to the three roads were rapid development areas, especially in the political and economic fields [4].

![Figure 2. Jalan Bojong, Jalan Pieter Sylthofflaan, and Jalan Randu which form a triangle, this area is known as the golden triangle of Semarang.](source: www.gahetna.nl)

In Semarang's highlands, where real estate or elite housing has begun to be built for European communities around the Candi Baru area [20]. A road is built connecting the real estate area with the central government areas in the city center (downtown). Apart from that, a successful entrepreneur from Semarang, Oei Tiong Ham, also built a road that connected the city's central part, which was also relatively high with Jalan Pieter Sylthofflaan. The road he built was later called Oei Tiong Ham Street [4].

Then related to the developing modes of transportation, there is clearly a shift from traditional transportation to modern transportation driven by machines. In this connection, traditional
transportation does not become extinct, only marginalized. Even though in the 19th century, they still dominated the transportation of goods and passengers both long distances between cities and those within short distances within the city. In the early 19th century, the use of public transportation around the north road (Ayer-Panarukan post road) in the Semarang area was the horse-drawn carriage. One of its users is the postal service, which usually uses a carriage pulled by four horses. In addition, these trains are also used to transport official guests, such as officials. Horse carts circulating the city of the fort and other European areas in Semarang are known to have attractive horse-drawn carriage designs. Besides, in the early 20th century, the use of bicycle modes of transportation was also widely used in Semarang [4].

The role of this traditional mode of transportation gradually began to be taken over by modern transportation modes that began to enter Semarang in the mid-1910-1920s. In these years, motorbikes and cars began to enliven the streets of Semarang. In addition, heavy transports such as buses and trucks have also begun to emerge and become an option when traveling long distances and distributing goods. The distribution of goods using a motorized vehicle is indeed much more efficient than using a buggy or wagon. Besides that, traditional transportation, such as a wagon or cart pulled by animals such as horses and cows, usually goes through difficult roads (uphill roads) in transporting goods. This obviously will take a long time to travel; besides that, the animals attracting this mode of transportation are sometimes also tired; even some of them also die in the middle of the road. This adds to other costs during the distribution process, including the risk of damage to the goods carried [21].

Apart from that, the infrastructure for passenger transportation between regions outside Semarang is also quite good. Roads were built connecting Semarang with several cities or surrounding areas, such as Jalan Semarang - Kendal, Semarang - Ungaran - Tuntang - Salatiga - Surakarta, and others. Apart from using a car for traveling, people can also take advantage of the existing bus transportation modes. One of the bus companies in Semarang, named ESTO (Eerste Semarangche Transport Onderneming), serves several of these routes [17].

3.3. Tram Network in Semarang City

In addition to the development of road infrastructure and various existing modes of transportation, the transportation network in the Semarang City area is also enlivened by the existence of an inner-city tram network. The tram network is part of the railway transportation network previously developed in Semarang, only serving routes between regions outside the city. The opening of the railway network in Semarang is phenomenal. The railway network in Semarang is the first railway network to open in the Southeast Asia region. The railway network's opening improves the economy, especially in Java, considering that the economic distribution will run faster from the hinterland to trade center cities and vice versa. Initially, this train network was built with the Semarang - Tanggung route, and then a route was also built between the two royal cities, namely Yogyakarta and Surakarta. Then from Surakarta a railway network was built to the port city of Semarang in the second half of the 19th century [22].

In Semarang City itself, there are several private railway companies. The construction of the train network in Semarang was initially carried out by the Nederlandsch Indische Spoorweg Maatschappij (NIS), both for the initial routes connecting Semarang with the Tanggun and Grobogan areas. The famous train line connects Semarang with Vorstenlanden (Surakarta-Yogyakarta) [11]. (Rizaldi & Susilowati, 2020: 1-10). After that, other routes were opened between Semarang and other areas, both heading west (Cirebon) and east (Pati). Two different companies opened the two routes, namely Semarang-Cheribon Stoomtram Maatschappij (SCS) & Samarang-Joana Stoomtram Maatschappij (SJS). The two companies have received concessions for managing the rail network that connects Semarang with Cirebon and Semarang with Juwana (Pati). However, what is interesting is the Samarang-Joana Stoomtram Maatschappij (SJS), not only because this railway company connects the land transportation network between Semarang and the eastern region, but also this company is also given a concession to develop a land transportation network in the city, namely by electric trams. The SJS company is led by J. F. Dijkman, W. Walker, Dan G.H. Baron Clifford; they got the concession.
around the 1880s and immediately started building the Semarang, Demak, and Juwana railway networks. However, they also started a concession to build a tram network within the city that same year. Even the city's tram network was completed earlier than the main route Semarang-Juwana [21].

For the first time, this tram line was built connecting \textit{Jurnatan} station with the southern part of Semarang City, namely \textit{Jomblang}, by passing through the \textit{Turi} and \textit{Bangkong} areas. Meanwhile, the second route was built connecting \textit{Jurnatan} Station and ending in the \textit{Banjir Kanal} area. On this second route, the tram line will pass through several important areas such as the main square, then go to \textit{Jalan Bojong (Jalan Pemuda)}, the NISM Office (\textit{Lawang Sewu}), and end at the \textit{Banjir Kanal} area. It can be said that this tram line is located on the east and west sides of Semarang City and connects the north and south on each route. Interestingly, all these rail networks have been available in the city of Semarang since 1883, long before the main route that the SJS company attempted to connect Semarang with the Pati area was completed, namely the mid-1890s. This tramline's opening became one of the three important elements to make Semarang a modern city in the early 20th century. The other two aspects are constructing a new port and the construction of the Bojong road [4].

Tram and train transportation modes also broadly support the distribution process to the Port of Semarang. This mode of transportation also complicates the position of traditional transportation modes. The train with the Semarang - Surakarta route has a speed of around 30 km/hour. This distance can be covered in about 3-4 hours with a large number of freight transports. Meanwhile, at the same distance, a cart and a cart pulled by a cow can only carry about 300-400 kg of goods, and it takes about six days to get to the destination [23].

Finally, local transportation modes only circulate in certain places. They are no longer the primary option for shipping goods over long distances and the development of land transportation networks such as cars and trains. The \textit{Delman} and \textit{Sado} (both are horse-drawn vehicle, only different in design of vehicle) drivers end up circulating in certain places, for example, around stations or the Kota Lama Area. They remain a mode of transportation, both for carrying passengers and for transporting goods, but at distances usually not too far away. Besides that, another implication received by those who continue to work as drivers of this traditional mode of transportation is a decrease in their income [10].

Nevertheless, unfortunately, the tram network in Semarang only lasted until 1940. One of the reasons for the elimination of this mode of transportation was because it was following the spatial concept of the city of Semarang, which at that time had been enlivened by many four-wheeled vehicles. The city government finally stopped the tram service, while the carriages and locomotives were sent to Surabaya. The same thing happened to the railroad routes belonging to SJS after independence. The Indonesian government nationalized this company, but one by one, the Semarang - Juwana route was eventually closed by the government.

4. Conclusion
The transportation network in the city of Semarang developed rapidly towards the turn of the 20th century. This network is not only a network that connects Semarang with outside areas but also between areas within the city of Semarang itself. Road infrastructure is essential for the transportation network in the city. Initially, the right roads were built inside the iconic Old Town Area. However, many new roads were built in subsequent developments, creating new concentration areas in the social, political, and economic fields. Besides, the city of Semarang in the early 20th century was also equipped with a tram network that had two routes in the eastern and western parts of Semarang. Both routes extend from north to south and vice versa. The development of land transportation networks in Semarang is part of the city's development in the early 20th century. This is also a response to the growing economy in Semarang and Central Java.

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