

A Brief Talk about Rail in Future Development

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Abstract: This paper explains why railway should be supported by the government in the future development rather than other modes of transportation.

The first step is to indicate that with the development of the society, railways are becoming more and more important among the five modes of transportation, and the consensus of rail transport has been achieved around the world.

The purpose of is to highlight the advantages of rail. By comparing rail transport with other modes of transportation. Meanwhile, propose some disadvantages of rail transport and the problems that may face in the future development.

In conclusion, summarizes the viewpoints of expected aspects and puts forward the suggestion that a comprehensive transportation complex should be built instead of only developing rail transport.

Keywords: Rail; Advantages; Disadvantages

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1. Introduction

With the development of the society, transportation has become an indispensable part of people's life, and the demand is increasing day by day. Road transport, rail transport, air transport and water transport are the main means of travel. In the future, rail transport air may become the best choices for people when they are considering of medium to long distance traveling.

Rail travel has been continuous improvements in quality, with increasingly user-friendly facilities, and it is less susceptible to weather conditions. During rain, snow, or fog, flights often experience prolonged delays that disrupt travel plans, while railway services maintain significantly higher punctuality rates. Furthermore, the operating speeds of passenger trains have been substantially enhanced. As a result, rail transportation is poised to become a dominant trend in the future.

2. Background

Currently, the development of rail transport has reached a consensus among countries all over the world, that is to develop rail transport, which has large volume, fast speed, low energy consumption, less pollution, safety and reliability, so as to meet the increasing demand of traveling. Urban rail transport has played an important role in solving traffic congestion. But the development of rail transport is directly related to the economy of the city.

^[1] The government invests in the construction of rail should base on enough fund. Compared with other public transportation, accessibility has become a measurable index.

Accessibility is to measure all the obstacles the passenger overcomes when choosing a means of transport to

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travel. It includes travel time, travel cost and travel distance. The accessibility is applied to public transportation. Its calculation of public transportation by using time can represent the travel mode and travel trajectory of travellers.[2] It shows the current situation of passengers, and can be helpful for managers to design a more effective way.

3. The Influence of Rail in Future Development

(1) The advantages of rail

Compared with other modes of transportation, such as road transport, air transport and water transport, railway has the following advantages.

The first one is the characteristics of large transport capacity. An entire train is usually composed of more than one carriage, usually connects eight or sixteen carriages, so the train can bear a large number of passenger and freight in one time.

Secondly, the speed of the train is relatively fast. Although it is not as fast as air transport, the speed of the train on the track is faster than that of road transport and water transport, and it will not cause congestion problems like cars on the road. If the terrain conditions allow, the train can run at a steady speed almost to the maximum limitation without stopping before arriving at the destination.

Thirdly, the train can run around the clock and is less restricted by geographical and climatic conditions. In the conditions of heavy rain, fog and other situations which cause obstruction of sight, flights are not allowed to take off. Besides, the ice on the ground also affects the take-off and landing of the planes. For the road transport, the safety is seriously affected in heavy rain, fog, snow and ice road. Rail transport, by contrast, is relatively less restricted, but it has to halt the train if the weather is extreme, such as heavy rains, and natural disasters, such as floods and mudslides.

What is more, railway transportation has low energy consumption, safety and reliability, and cause low pollution to the environment.

1) The accessibility of rail in the future development

Time is usually the primary consideration when people choosing a way to travel. Taking metro for example, the travel time includes the waiting time, travelling time and transfer time. With the increase of metro lines in the future, the number of stations will increase accordingly, so the time for people to go to the station and the time from the station to the destination will be shortened. Metro operation, unlike road transport, which can cause traffic jams. Also, the speed of metro can be guaranteed, so as to be efficient and reduce the running time.

The cost of travel is also low. In urban public transportation, bus has the lowest cost but with long time to travel. While taxis are quite the reverse. As a result, metro has become the most effective way, with lower cost and less while traveling.

With the improvement of the metro network, it can cover a larger urban area, and the spatial distance between the starting point and the destination will be shortened. Take travel time, travel cost and travel distance into consideration, metro has become the most convenient way. This is why the government should invest in the rail construction in the future.

2) The social mobility that rail can benefit

Rail transport has the characteristics of large volume, which means it can transport a large number of passengers at one time. And the mobility can promote consumption and economic development. In the future, rail transport will connect more and more cities, enabling people from different regions to communicate with each other and

enrich their culture. The construction of rail transport also indirectly reflects the economy and the influence of the cities, thus improving the competitiveness.

(2) The disadvantages of rail

Though rail has certain positive aspects, it also has some disadvantages. For example, the planning time before construction is relevantly long, and the investment can be huge. Besides, railway lines and stations cost a long time to build, which can bring inconvenience to the citizens. In addition, due to the limitation of the rail lines, the operation flexibility of the trains is restricted, the trains can only run on its own line. Further, if the rail lines and stations are needed to rebuild or expand in the future, it will be a very troublesome thing with a large amount of work.

(3) The issues may arise from the development of rail

Take the metro as an example. During the process of construction, it may take three to five years or more to finish the construction. So how to deal with the traffic jam on the ground caused by the temporary inconvenience? Warning signs can be set up for vehicle controls and traffic policemen can guide the cars. Also, the pathways of the road can be changed from two directions to only one, to reduce the car intersections.

Another possible problem is that with the investment and construction of rail transport, in fact, the operation is at a loss. So how to solve the problem of economic loss? Well, metro, as a public transportation, is supported by the government. Its purpose is to let more and more people choose to take public transportation and reduce the number of private cars on the road, so as to relieve urban congestion and improve the environment. The government and manager of the metro company can appropriately adjust the metro ticket prices to reduce the loss. Another method to make up for the loss, is to raise the parking fee of private cars in the parking lot. The price of petrol fee and express way's traveling fee can be increased too.

4. Overall

Nowadays, for one thing, with the rapid development of metro, people can go to work and school by metro, and travel to tourist attractions or go to hospitals and for some other purposes of traveling. Sometimes just need to combine with another mode of transportation such as a shared bicycle or the bus for two or three stops. People can arrive at their destination within the expected time, which is quick and convenient, and this is also the purpose of the design of the travel mode. With the increase of the metro lines that are planned and constructed in Chengdu, also the number of metro stations increases, the accessibility will be improved greatly. People can not only save the travel time but also save the travel cost when compared with other means of transport.

For another, in the era of big data, the network can record the daily passenger flow of each station, including inbound passenger flow, outbound passenger flow and transfer passenger flow. The data of passenger flow can provide the basis information for the improvements of the future passenger transport organization and the train operation mode. By using these data analysis, manager can suggest a more beneficial way to increase the efficiency when passengers entering and leaving the stations, also enhance the available of all kinds of facilities. To sum up, the development of rail can bring a better traveling experience for passengers.

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