

Research on the Coordinated Development of Metro Economy and Urban Area——Taking Taiyuan Metro as an Example

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Abstract: In 2009, Taiyuan City officially launched the subway construction project. At present, the construction of Taiyuan subway line has been in full swing. Looking at major cities at home and abroad, urban subway has become an indispensable part of the development of large cities. China is the world's largest rail transit construction market, and subway construction has become an essential way for China's big cities to boost the economy. However, although there have been studies on the metro economy in China, there are few detailed analysis and theoretical explanations on the construction of subways in second- and third-tier cities. On the one hand, Taiyuan, a second-tier medium-sized city, needs to adopt rail transit as a new way to promote urban regional economic development. On the other hand, the contradictions between Taiyuan's crowded road conditions and rapid development have become increasingly serious, energy-saving, environmentally friendly, and efficient. Thrust is also the key to breaking the bottleneck in the development of big cities. As a result, the subway economy came into being. However, people in many places are still very strange to the subway. They think that there is no need to build a subway in the city scale of Taiyuan. It can be seen that the various characteristics of the metro economy in the modern city have made it a research subject that has to be focused on.

1. Introduction

Taiyuan Metro currently plans eight lines, of which Line 1 and Line 2 are the main lines, which are in the shape of “力” so that Metro Line 1 and Line 2 will cover the main passenger corridors in the east-west direction and north-south direction of Taiyuan City. Lines 3 and 1 have a centrally symmetrical shape around Line 2, and Metro Lines 4 to 8 are medium- and long-term plans. On November 2, 2013, the central section of the first phase of Taiyuan Metro Line 2 started construction. It is expected to be commissioned in October 2020.

The subway passenger transportation economy is characterized by the network, low cost, and scope economy, and is a typical natural monopoly. If the alternative role of ground transportation is not considered, there is almost no substitute for rail transit in the subway. Because ground transportation does not have the characteristics of quickness and punctuality, the primary purpose of people choosing transportation is to realize space transfer quickly and on time. Therefore, the substitution of ground transportation to the subway is extremely weak, and it is necessary to enhance the competition of ground transportation to the subway. The cost may be huge, such as a large number of repair bridges, a large number of public transport lines, etc. Besides, the subway passenger transport business is relatively simple, and the cost transparency is relatively high, which is relatively easy for the government's price control and supervision.

The focus of this paper is:

- (1) Exploring the elements of future regional coordinated development of Taiyuan Metro Project, mainly from the dimension of subway performance correlation;
- (2) Focusing on some possible problems in the future economic construction and operation of Taiyuan Metro;
- (3) Provide constructive policy recommendations for the coordinated development of Taiyuan's future rail transit.

2. Performance analysis of Taiyuan subway development

When urban subways are compared with other urban public transportation, the main benefits are reflected in the regional economic, social, and ecological aspects.

2.1. Analysis of the benefits of a regional economy

The metro economy can promote the rapid development of surrounding businesses and can play a mutually supportive role with the regional economy, driving the consumption of the metro area. Specifically, it analyzes from the following four aspects:

2.1.1. Real estate

From the perspective of geographical location, the future development of South Central Street and Jinyang Street is inseparable from the warming up of Taiyuan South Station. After the Taiyuan rail transit plan was exposed, many real estates in Nanzhonghuan Street of Taiyuan City claimed to be subway houses, attracting many home buyers. On both sides of Jinyang Street, there are already high-end residential and office buildings in Taiyuan, such as Taiyuan Hengda University and Haishu Mansion.

Also, the real estate market has always relied on the location and quality of the property to determine the price. Generally speaking, the farther away from the city center, the lower the price. However, with the construction of the subway, the "Metro Property" will greatly dilute the inherent concept of urban and suburban areas. This "price-based price" pattern will undergo fundamental changes. "Metro subway, gold million two" has already become the "golden rule" of the global real estate industry. Of course, Taiyuan is no exception. The housing prices in the outer suburbs that have been left unattended will rise rapidly with the planning of subway lines.

2.1.2. Business circle

The existing business structure in Taiyuan is mainly based on the original traffic pattern. Many businesses are concentrated in the business districts with large traffic flow such as Liuxiang and Changfeng. With the official opening of Metro Line 1, it will break this pattern and create more new business districts with expansion space, allowing the subway to string up new business districts in the city, making the city's commercial layout more balanced and more reasonable. The traffic advantages of the South Station and the Beijing Area are obvious, and the more valuable is its unique economic and cultural advantages. At present, Taiyuan High-tech Zone, Taiyuan Economic Development Zone, Shanxi Science and Technology Innovation City, Jinzhong Economic Development Zone, Yuci Industrial Park, Shanxi University City, Shanxi University, Shanxi University of Finance and Economics, and other campuses surround the surrounding areas. These superior resources are integrated into the entire region, and there are a great business opportunity and appreciation space. According to the plan, the surrounding Jinyang Street is more prosperous, with high-quality supporting resources and the most convenient transportation system. Jinyang Street is gradually approaching the planned center of the South Station business district. With the promotion of the subway, the urban supporting construction of the South Central and Jinyang Street areas has become more and more perfect, and various commercial projects have swarmed. This business district will become the main axis of the Taiyuan South Station business district.

2.1.3. Advertising industry

From the perspective of the advertising industry, the subway is a media field with strong communication capabilities, covering a large number of people and a high depth of contact. The subway is an important means of transportation in daily life and work. Generally, the passenger flow is relatively large after completion. Compared with TV commercials, subway advertisements are more likely to obtain more exposure frequency than relatively fixed travel habits, enabling high-frequency repetition to reach the target audience and high contact depth. With the construction and operation of Taiyuan Metro, the scale of subway passenger flow will gradually increase, the market for subway advertising will become larger and larger, and the advertising revenue generated

will be huge, which can promote the development of Taiyuan advertising industry.

2.1.4. Tourism

The subway has a huge role in enhancing the city's tourism image and expanding the tourism space. First of all, the artistic design value of the subway station can enhance the urban characteristics of the subway station and help to build the core competitiveness of the city. Secondly, the excellent visual design of the subway can effectively enhance the city culture and promote the spirit of the city. Finally, the subway can be greatly improved. The smoothness of traffic reduces the travel time of tourists, thus promoting the development of the tourism economy.

2.2. Analysis of social benefits

The construction, operation, and management of urban subways require a lot of workforce, material resources, and financial resources. At the same time, the requirements for the construction personnel are not very high. Therefore, many job seekers are provided with jobs and employment opportunities to solve the problem further. Employment problem.

2.3. Analysis from ecological benefits

Energy and land resources can be effectively saved. Compared with other vehicles, the energy consumption of urban subways is relatively low. In today's energy-intensive environment, the appearance of the subway is good, and the environmental benefits can be improved to a certain extent. The urban subway is built underground, occupies less floor space, effectively saves land resources, and can be isolated because it can be operated underground. noise. The subway is powered and operated by electricity, so it can effectively prevent air pollution and greatly improve the urban environment; improve the layout of the city. Because the subway has the characteristics of fixedness and permanence, it can improve the layout of the city and the planning of the population to a certain extent, thus helping the city to achieve better development and progress.

3. Current status of problems in the economic development of Taiyuan Metro

3.1. Lack of professional market operation

Different from the domestic subway business development model, the Hong Kong subway adopts the subway construction and the subway site to cover the development of large-scale properties. The MTRC and the government have reached an agreement to unify the land acquisition along the subway to build the property on the site. The subway company is responsible for all the land parcels. Coordinate development, develop development plans and property plans, select developers, through bidding, and manage the properties under the property. Due to technical limitations, the underground commercial business area is small, and the size of the subway covered building is not only large, but its commercial value is also high. From the perspective of the commercial development of metros in Shanghai, Beijing, Guangzhou, and other cities, the subway operators have not paid much attention to the great value of the subway cover business, basically based on underground business, and have not developed the upper cover property. The government mainly leases the land along the Taiyuan Metro according to the project. There is no unified, leasehold land. There is no coordination between the subway construction and the subway superstructure. The value of the superstructure is not used to the maximum. The lack of professional subway operators is The main factors that restrict the subway from hindering the development of the subway business.

3.2. The low commercial development rate of the site

Judging from the operation of the subway in Taiyuan, the number of subway lines is generally around 17 stations. However, there are not many subway commercial stations. The opening of the subway may only realize its transportation function, but its potential commercial value is not. Get enough digging. From the perspective of the commercial development of first-tier cities, most of them are concentrated in the original business district of the city. The business circle drives the

common prosperity of the metro business. Therefore, the role of the subway in driving commercial development along the line has not yet fully manifested. The subway drives the commercial development of the city to form a new business district. Not much.

Also, the track business is attached to the characteristics of the people flow brought by rail transit, which determines its commercial positioning is popular, non-high-end, and fashionable. It is not upscale to buy high-end luxury goods will not squeeze into the subway station. In the past, people traveled for consumption, and now they have become shopping because of travel. In the orbital business, people's consumption habits have also changed.

3.3. Insufficient development of tourism resources

The Taiyuan Metro covers the main parks in the city, such as Yingze Park and Xuefu Park. However, the connectivity to the large parks outside the suburbs is relatively poor. Take the Dongshan Wulong Ecological Forest Park as an example. The nearest subway station to the Dongshan Wulong Ecological Forest Park is the end of Line 1. However, this subway station lacks public transportation means on the ground to connect with it. It requires the players to solve the transfer problem on their own, which is not conducive to the development and utilization of large-scale suburbs.

4. Policy recommendations

4.1. Reasonable layout of the metro shopping district

The commercial layout and development of the industry along the subway will gradually change the consumer's consumption habits; the consumer demand of the consumer will promote the development of the commercial line along the subway and the innovation of the industry. Taiyuan Metro should rationally arrange the metro shopping district to promote the vigorous development of the commercial line along the subway. The Taiyuan Metro business plan should learn the business philosophy of the Hong Kong MTR. The subway station is best connected to the industrial city. When you enter the subway station, you can enter the mall directly and create the people. The investment strategy adopts "lease-based, unified investment promotion" and introduces well-known chain brands to play the role of "business introduction." At the same time, taking into account the business level of the merchants, select the appropriate tenant service target consumers. According to the different characteristics of the subway station, choose different business models of the grade, and then attract suitable business operators.

Commercial district sites are best suited for developing mid- to high-end businesses, and large department stores are becoming mainstream. At present, the status of the commercial operation of the subway is very dependent on the location. The commercial atmosphere of the traditional commercial center is secure. The property management status of each type of property is relatively good, and the rent is also high. Among them, large-scale shopping centers dominated by department stores. For example, the combination of Hong Kong Mingdian Street and Raffles City Plaza in People's Square subway station not only adapts to the mobility needs of the subway business but also raises the positioning.

Table 1 Operational Grades of Commercial Areas in Shanghai and Guangzhou

	Station	Business type	Operating grade
Shanghai	Line 1 Shaanxi South Road Station	Parkson Shopping Center, Paris Spring Department Store	High grade
Guangzhou	Line 1 Sports West Road Station	Tianhe City, Zhengjia Square	High grade

The transportation hub site is suitable for the development of professional wholesale markets. Sites located in transportation hubs, due to their large traffic volume, numerous sources, complex structures, and low level of personnel consumption, it is challenging to form regular consumption.

Therefore, the main business is retail and wholesale, and the operating level is low. Judging from the layout and scale of commercial space, most of the traffic hub-type subway commercial underground areas are relatively small, and the mainstream store forms are mainly small shops of 5-30, which is difficult to form an active store atmosphere. In addition, crowd intensive is one of the necessary conditions for commercial prosperity. The function of the transportation hub brings a massive flow of people from surrounding cities, which is suitable for the development of professional markets with wholesale properties.

4.2. Building a diversified shopping environment

The centralized underground shopping mall can attract different consumers through the theme shopping channel, and also open a community shopping channel to attract more community and family consumption, and do an excellent job of subway business according to different regions and different groups of people. The rational market positioning and efforts to build a diversified shopping environment. Promote the vigorous development of commerce along the Taiyuan subway.

4.3. Reasonable development of the functional requirements of the subway

The function of the subway can make consumers not only rush through the passengers, but a leisure experience, making passengers feel that the subway is a good value for money: increase the commercial land in the subway. Study the Tokyo Metro in Japan, collect rents, and provide passengers with simple and fast business services, such as temporary meeting rooms and lounges.

Underground culture should highlight the regional characteristics. Taiyuan subway operators in addition to the pursuit of economic interests, and we must also pay attention to the construction of cultural atmosphere, Taiyuan and should create a set which adapts "Metro Culture" in accordance with subway environment. In addition to installing commercial facilities, it increases the cultural space for people to communicate and further extends the cultural functions of the subway:

- 1) Open a holiday city daily tour line according to festivals or tourist attractions, and fully explore the tourism culture in Taiyuan.

- 2) Drawing on the characteristics of Qingdao Metro with the theme of "Ocean," choose the "natural color" of Taiyuan Metro that can highlight Taiyuan's characteristics. The artifacts unearthed in Taiyuan can be extracted into small objects in the underground site, such as the handle of the subway railing with the national-level cultural relics as the prototype; the chandelier of the underground site is designed in the shape of the white glaze hollow smoke furnace. The decorative themes in the trains of different lines can have their characteristics, and the Shanxi merchant culture and local tourism culture can all be chosen.

- 3) Free to present the subway memorial card with the characteristic building of Taiyuan, and cooperate with surrounding real estate companies or other companies to send free souvenirs and free hot coffee to passengers on a particular day or a specific anniversary; The issuance of running schedules, rides, subway service projects, etc., gives passengers a feeling of being at home.

- 4) Use news advertisements, station billboards, and advertising lights to publicize publicity, advocate environmental awareness, help old, weak, and disabled, and advocate new culture and new trends.

Through these, the Taiyuan Metro brand culture will be formed, and media tools will be used to help publicity. The subway company can use various media to publicize the operation of the Shanghai Metro, personnel strength, future development, etc., actively expand the social influence, so that the public can understand and familiar with the subway, and at the same time establish a web page to make the world understand.

4.4. The collaboration of business models

There are three main ideas for the reform of the subway management system: First, to improve the efficiency of the subway management system through the adjustment of property rights. This idea is based on the PPP model of Beijing Metro Line 4, which solves financing and stimulates capital management. Efficiency is useful.

Second, through the separation of all aspects of the subway business process, improve the

management efficiency of the subway management system. This idea is represented by the business model of the Shanghai Metro, which is conducive to the constraints between the vertical links in the subway operation process, and at the same time introduces the various track lines. Horizontal competition between. The substitution between the various rail lines of the subway is extremely weak.

The third is to introduce integrated management of market mechanisms. This kind of thinking is represented by the business model of the Hong Kong MTR. It is integrated into the market through the introduction of market mechanisms. The Hong Kong MTR is one of the few profitable subways in the world.

4.5. Subway maintenance introduces competition mechanism

The subway maintains economic activities that are not professional in the economy, such as platform maintenance, cleaning, maintenance of water and sewage, maintenance of lighting lines, etc., and the passenger transportation economy does not have a fixed business connection. The passenger transportation economy certainly needs these services, but can engage in. There are many enterprises in these business activities, and the enterprises that provide these services do not rely on the passenger transportation economy to survive. Both sides have more excellent choices. Therefore, this part of the subway maintenance economy can introduce a competitive mechanism to make them from the subway. Separated from the operating system and operated independently.

4.6. Make full use of Taiyuan Metro to develop the tertiary industry

The subway is a means of transportation that can take advantage of the network nature of the subway to achieve functional innovation. Set up several function-oriented boxes at each station of the subway and in the subway car: integrate various tourist attractions and cultural streets in Taiyuan and all hospitals in a guide book, so that some people who love to travel can use the subway more easily and conveniently. Visit and see a doctor. Receive a certain amount of advertising profit from it. Similarly, the specific sites of Taiyuan's snack street, major shopping malls, and cinemas are concentrated, which makes it easier for people on the subway to travel and improve the network function of Taiyuan Metro.

Secondly, strengthen the quality of Taiyuan subway staff and standardize the daily work system. The passenger's understanding of the subway is good or bad, and the loyalty is formed by the services he has contacted. Therefore, the service awareness, service attitude, and service skills of the subway staff will significantly affect passenger satisfaction, the reputation of the subway company, and the economic benefits. Influences. Especially when the first-line employees are not only uniform in dressing but also speech acts should be polite and appropriate, reflecting a high level of professionalism, so that consumers can appreciate the quality service of the subway in the warm care so that the economic benefits of the subway will increase.

5. Conclusion

With the development and evolution of China's urban economy, the economic opportunities of the metro under the big cities are constant, and Taiyuan, as the capital of Shanxi Province, naturally has inherent advantages. This paper mainly studies the challenges that the Taiyuan subway economy will face in the future under the development of regional synergy factors. Through the analysis of the synergistic factors, this paper draws the following conclusions: First, the metro economy has an unparalleled synergy effect on the economic, social and ecological aspects of suppliers, users, and friends, and this effect drives the city's new round of economy. Growth and stimulate urban potential. Secondly, the problems behind the metro economy are still not to be underestimated, such as the debt problem in the subway investment process and the market benefits after formulating operations and the social benefits of public goods. Finally, we can use different ways to plan for the development of the metro economy, and how to use the different lines of the metropolitan area, real estate, parks, attractions, etc., to promote economic development. Social progress activities or other behaviors further enhance urban competitiveness.

Therefore, through the above analysis and conclusions, we hope to provide appropriate policy recommendations for the economic development of Taiyuan Metro to promote the development of Taiyuan City better, make the city economy more competitive, more centripetal, gather spirits and create smart cities. With a harmonious city.

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