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Urban Transportation Development in China: Current State and 2035 Prospect

ZHANG Hua[1], LEI Lingyun[2], LIU Ruoyun[3], TU Yingfei[3], CHEN Xiaohong[4]

1. National Maglev Transportation Engineering R&D Center, Tongji University, Shanghai 201804, China;
2. Institute of Rail Transit, Tongji University, Shanghai 201804, China;
3. Urban Mobility Institute, Tongji University, Shanghai 201804, China;
4. College of Transportation Engineering, Tongji University, Shanghai 201804, China

Abstract: An in-depth analysis of the foundational characteristics of urban transport in China, the accurate identification of existing issues, and the projection of future development trends are fundamental tasks for formulating urban transport development strategies. This paper summarizes the characteristics and evolution in urban transport demand over the past four decades in China, highlighting two prominent trends amid the ongoing urbanization process: the diversification of travel types and purposes, and the general increase in commuting distances. Reviewing the outstanding achievements in transportation infrastructure and informationization in road facilities, public transportation system, and transportation informationization, the paper highlights practical issues in China's urban transport system, such as its misalignment with the urban spatial development, declining operational efficiency, and need for enhanced governance capabilities. Looking towards 2035, urban transport development should return to the value orientation that prioritizes meeting people's needs and supporting efficient urban operations. Digital, information-based, and intelligent technologies should be leveraged to drive innovations in developing transportation supply-demand models, governance systems, and governance capabilities, to further promote a deep integration with urban space, economy, society, and ecology and advance towards a vision of high-quality, highly accessible, inclusive, and sustainable development. **DOI:** 10.13813/j.cn11-5141/u.2024.0304-en

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0 Introduction

With the rapid development of economy and society in China, and as the urbanization process goes deeper, the urban transport system has made remarkable achievements in the past four decades. The great improvement of motorization level and the rapid popularization of new energy vehicles has strongly promoted the green transformation of urban transport. Public transportation systems, especially urban rail transit systems, have undergone large-scale construction. Pushed by the strategy of city cluster and metropolitan area, the construction of city regional (suburban) rail transit has invigorated the integrated development among cities [1–3]. As urbanization enters the high-quality development stage, some characteristics are increasingly prominent, including the differentiation of residents' travel demands and travel characteristics, the diversification of travel types, and the general increase in commuting distances. This has placed higher demands on the future urban transport service models and service capabilities. The large-scale construction of transportation informationization facilities and application systems has promoted the intelligent and information-based evolution of urban transport. Thanks to it, a series of new travel modes and digital service platforms have been generated. The operation efficiency and service quality of urban transport have also been greatly improved [4–6].

However, practical issues still exist in the urban transport system, such as its misalignment with the urban spatial development, declining operational efficiency, and need for enhanced modern governance capabilities [7]. Looking towards 2035, urban transport development in China will prioritize meeting people's needs, and highlight the efficient allocation and multi-subject collaboration of public service resources. With the arrival of informationization age, the revolution of urban transport supply-demand models and control means will be further promoted. The transformation from infrastructure expansion to refined and intelligent governance will be realized. A new landscape of more efficient, convenient and green urban transport will be shaped through the innovative development of integrated travel services. In this context, an in-depth analysis of the foundational characteristics of urban transport in China, accurate identification of existing issues, and the projection of future development trends are fundamental tasks for formulating urban transport development strategies [8–9].

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1 Significant transformation of urban transport demand characteristics

1.1 The unique motorization process in China

The motorization process in China is developing rapidly. The number of motor vehicles increased from 25.35 million in 1995 to 435 million in 2023, with an annual average growth rate of 11%. The annual average growth rate of the number of civilian vehicles was up to 13% (see Fig. 1). The motorization level in large cities is higher. In Nanjing, Wuhan, Suzhou and other new first-tier cities, the level of vehicle ownership per thousand people is 1.7–1.8 times the national average level. The rapid popularization of new energy vehicles has brought new variables to the development of urban transport systems. For new energy vehicles in China, the technology level increases rapidly, and the price declines quickly. These two advantages jointly accelerate the penetration of new energy vehicles into the sales market. In 2023, the sales volume of new energy vehicles in China was about 9.5 million, accounting for 63.5% of the global market (see Fig. 2), and 31.6% of the Chinese new car sales market. New energy vehicles speed up the penetration into markets. This has not only brought new requirements to urban infrastructure planning and construction, but also posed a long-term impact that cannot be neglected on the demand characteristics and total volume of urban road transportation due to factors such as usage cost and management tolerance (unrestricted traffic measures).

Subject to traffic congestion, vehicle purchase cost and other factors, electric bicycles are convenient and economical, thus playing an important role in urban transport. In 2023, the electric bicycle ownership in China was estimated to be more than 350 million, almost the same as the motor vehicle ownership. The massive popularization of electric bicycles provides urban residents with economical and convenient travel options, demonstrating that the urban transport system is inclusive for diversified travel modes.

1.2 Differentiation and transformation of transportation demand characteristics

There are two prominent trends in travel characteristics amid the ongoing urbanization process:

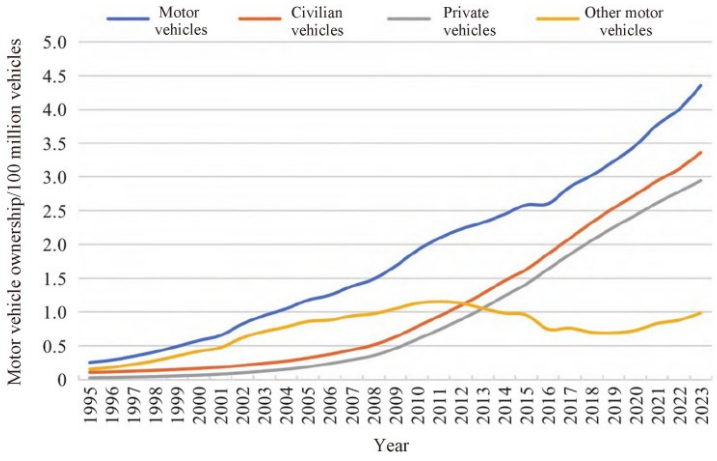

Fig. 1 Motor vehicle ownership in China from 1995 to 2023

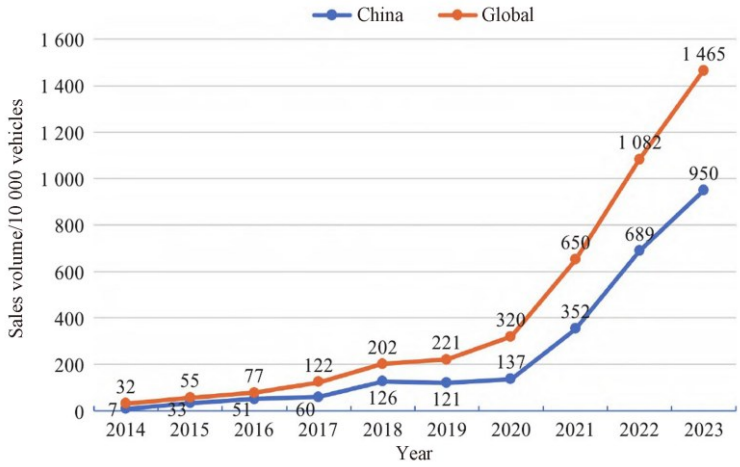

Fig. 2 Comparison of 2014–2023 global and Chinese new energy vehicle sales

1) Diversification of travel types and purposes

When manufacturing is the principal form of work in cities, commuting is the main travel purpose of urban residents. For example, in the 1980s and 1990s, the proportion of commuting in Shanghai exceeded 65%. With the upgrade of urban industries and the significant improvement of people's living standards, the travel purposes of urban residents gradually present the characteristics of "Maslow's hierarchy of needs" and market segmentation, that is, the development of travel purposes shows a diversified trend. Since the 1970s and 1980s, typical cities at home and abroad have shown characteristics that the proportion of commuting declined while the proportion of flexible travel for life increased. From the 21st century, the proportion of commuting among urban residents usually fluctuates between 40% and 50%. The growth of non-commuting travel demand has put forward new requirements for transportation services. More attention shall be paid to the quality of transportation services, such as comfort, safety, personalization, accessibility and experience.

2) The general increase in commuting distances

Due to urban expansion, the travel distances of residents have become longer generally. Taking the average distance per travel as an example, the distance increased from 4.5 km in 1995 to 7.6 km in 2019 in Shanghai, and the distance increased from 5.2 km in 1986 to 9.0 km in 2018 in Beijing. Despite the increase in travel distance, the time consumed per travel and the travel time consumed per day are kept relatively stable because of the popularization of motorized vehicles, which is in line with the travel time budget law. In addition, obvious long-distance commuting has appeared in some large cities. According to the 2023 Commuting Monitoring Report of Major Cities in China, in 2022, the average commuting distance in megacities reached 9.6 km, and that in supercities was 8.6 km. This phenomenon reveals the expansion of commuting travel range and new challenges to public transportation systems and urban planning.

2 Structural changes in the development of urban transport facilities

2.1 The growth of road facilities has entered the stable period

1) The construction of urban road facilities has been vigorously enhanced.

In China, the urban roadway mileage increased 2.72 times from 132,583 km in 1996 to 492,650 km in 2020, with an annual average growth rate of 5.6%. During the same period, the urban built-up area increased 2.0 times, and the urban population increased 1.42 times. By contrast, the growth of urban roadway mileage was greater. In 2022, the average density of road networks in 36 major cities in China was 6.3 km·km^{-2}, which has reached 78.75% of the 8 km·km^{-2} proposed in the Standard for Urban Comprehensive Transport System Planning (GB/T51328-2018).

2) The growth rate of urban road facilities tends to stabilize.

As can be seen from national data, the growth of urban road facilities is divided into two stages: the first stage is 2002–2010, and the annual average growth rate of road area per capita was 6.6%; the second stage is 2011–2020, and the annual average growth rate of road area per capita dropped to 3.1%. The growth space of road facilities in megacities (supercities) has been very limited. Optimizing the utilization benefit of facility resources is the main solution in the new era. As shown in Fig. 3, during the 11th Five-Year Plan period, the annual average roadway mileage growth rates in Beijing, Guangzhou and Shenzhen were all more than 6%, but dropped to 1%–2% during the 12th Five-Year Plan period, and further declined to below 1% during the 13th Five-Year Plan period. During the 13th Five-Year Plan period, the annual average roadway mileage growth rate in the central urban area of Shanghai even reduced to 0.67%.

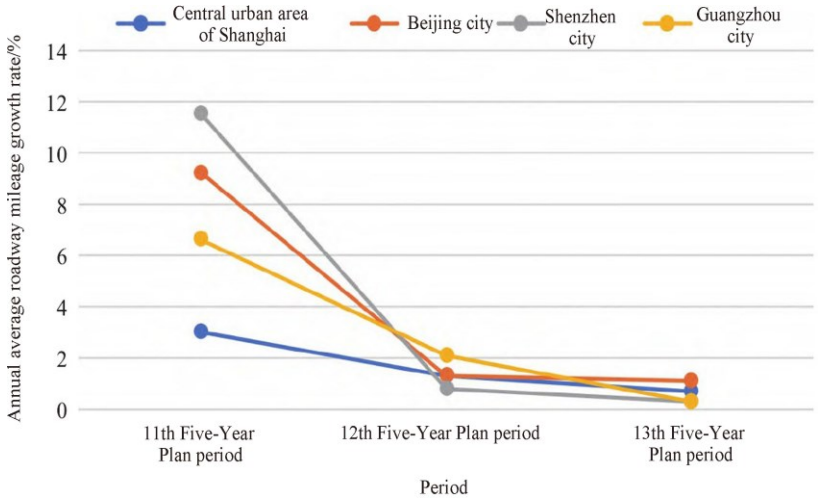

Fig. 3 Changes of annual average roadway milage growth rates in typical mega cities

2.2 Ongoing vigorous construction of public transportation system

1) Under the guidance of the urban public transit priority development strategy, the public transportation system facilities and equipment are constructed and increased massively [10].

From 2005 to 2021, the length of lines in operation of urban public buses and trams has achieved substantial growth, increasing from 0.159 million km to 1.594 million km, with an annual growth rate of 15.5%. The number of operating public buses and trams has increased significantly, and the number of public buses and trams owned per 10,000 people in cities has increased from 3.8 in 1996 to 12.88 in 2020. The prevalent dilemma that passengers had difficulty in riding public buses and trams in the 1980s and 1990s was successfully solved. With the enhancement of urban construction investment capacity, the positioning of urban rail transit system has shifted from war preparation early on to serving urban development and people's livelihood needs, which has undergone rapid expansion and construction. As of 2023, 55 cities in China have opened and operated urban rail transit lines, with an operating mileage of more than 10,165.7 km. Nearly 7,000 km of lines will be put into operation in the next 5–10 years.

2) With the further advance of the strategy of city cluster and metropolitan area, city regional (suburban) rail transit has become the construction focus in the new era.

In 2023, 30 rail transit lines (sections) started to build across China. The construction mileage is 925.2 km, and approximately 576.17 billion yuan will be invested. Among them, 8 city regional (suburban) railway lines (sections) started to build. The construction mileage is 531.4 km, and approximately 254.79 billion yuan will be invested. The construction mileage and investment account for 57.4% and 44.2%, respectively, and the proportion of construction mileage has exceeded the urban subway system. In the future, the concept of "metropolitan area on rails" will continue to deepen. By facilitating the multi-level rail transit construction of "four-network integration", city regional (suburban) railways and intercity railways will effectively promote the integration of metropolitan area and city cluster.

2.3 World-leading transportation informatization construction and application achievements

1) For nearly 20 years, the urban transport development in China has achieved outstanding results in many areas, including informationization and intelligence.

The research and application of intelligent transportation worldwide started in the late 1980s and early 1990s, represented by the United States, Japan and Western Europe. The first ITS World Congress was held in Paris in 1994. The research of intelligent transportation in China has developed almost concurrently with the international level, lagging behind by about 3–5 years. In the first decade of the 21st century, with the continuous funding of national key scientific and technological projects during the "10th Five-Year Plan" and "11th Five-Year Plan", more than 10 cities such as Beijing and Shanghai carried out transportation information system construction and demonstration applications. Transportation information collection and monitoring, guidance services, network control, signal priority, integrated transportation information platform and other systems have been vigorously built, laying a technical foundation for the improvement and reengineering of urban construction and transportation planning decision-making processes. Besides, these systems have been successfully applied in important events, such as Olympic Winter Games Beijing 2022, Expo 2010 Shanghai China, and the 2010 Guangzhou Asian Games.

Since 2010, the informationization and digitalization of urban transport have continued to penetrate deeply. Megacities (supercities) have successively built the second-generation urban comprehensive transportation data information platform with multi-source data integrated. And the platform has been applied on a large scale to support decision-making and enhance the management benefit of transportation system (see Fig. 4 and Fig. 5). The second-generation urban transport data information platform integrates multi-source data, including population, land, vehicle, transport network status and logistics. The data granularity is continuously refined in time and space. The analysis object is expanded from the system operating status to the activity characteristics of individual vehicles and people. The analysis perspective is shifted from the OD flow analysis of aggregated space to the activity flow of people and vehicles, further consolidating the data base and information sharing capabilities. Mid-and-long term facility planning decisions, operation development report preparation and public information services are all supported. Based on this, the system service application further strengthens the daily operation management decision support and industry management business application capabilities. Thus, an integrated application with one network for unified management and one network for all transactions is formed.

2) With the development of mobile Internet services and the sharing economy, digital transportation services are innovating constantly.

Innovative travel services are changing quickly, such as appointed travel, shared travel, and instant logistics distribution. In 2022, the daily average order volume of online car-hailing in China exceeded 20 million. The daily average order volume of bike sharing exceeded 33 million. The annual total volume of express delivery exceeded 110 billion, and the daily average volume of express delivery

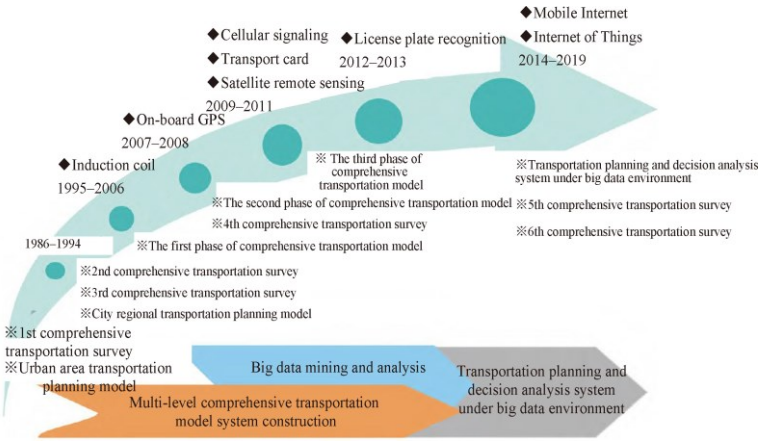

Fig. 4 Iteration and evolution process of Shanghai's transportation big data platform

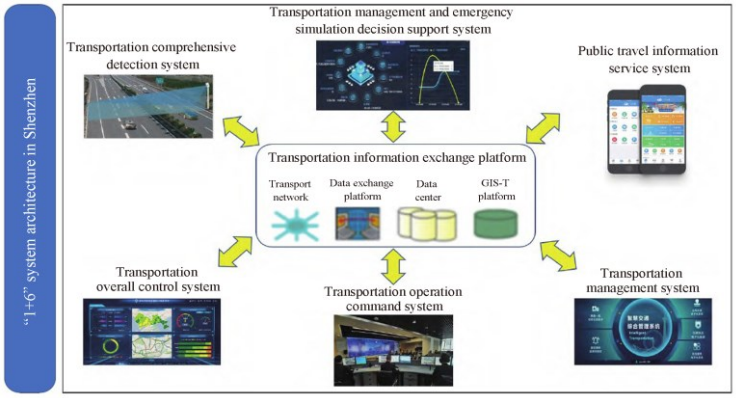

Fig. 5 Framework of Shenzhen's transportation information sharing platform in 2017

exceeded 300 million. Comprehensive progress has also been made in many other aspects: smart mobility represented by mobile maps, navigation, and online car-hailing; intelligent transportation represented by the openness, integration and innovation of transportation big data; and transportation government affair services represented by transportation portals, Weibo and WeChat official accounts.

3 Issues that exist in urban transport development

3.1 Misalignment between transportation and urban spatial development

Urban rail transit is the focus for urban transport development, which has generated new issues, while remarkable achievements have also been made. 1) The expansion of urban rail transit construction scope has brought challenges to the differentiation of service efficiency and the sustainable development of public finance. For some cities that have built urban rail transit, their passenger flow volume doesn't match the transportation capacity of urban rail transit. For example, in many cities with a population of about 2 million in urban areas, the passenger traffic intensity of their urban rail transit lines is always low, and it is expected that it will be hardly to form a network scale effect in the future. 2) The investment scale of urban rail transit construction is large, squeezing the development space of other modes of transportation. In some cities, such as some provincial capitals in China's northeastern and central and western regions, the economic development level is low, and the fiscal investment and diversified financing capabilities are weak. But these cities still regard urban rail transit as the core of investment and construction. Hence, the development space and resource investment of other modes in the public transportation system are squeezed on the public investment side.

In megacities (supercities), there is a misalignment between the development of urban rail transit and the urban spatial layout and function adjustment, which objectively increases the travel distance, especially the commuting distance. So, the travel time cost of residents is not significantly saved. Taking Shanghai as an example, the urban rail transit network density in the inner ring area is 1.62 $km \cdot km^{-2}$, and the station density is 0.83 $\cdot km^{-2}$. The coverage rates of areas, populations and jobs within a 600-m radius of stations are 78%, 88% and 90%, respectively, which has already met the requirements of 2035 urban master plan. However, urban transport does not offer

adequate support for the development of important nodes in non-central urban areas: 1) There are no urban rail transit lines directly connecting to a lot of urban sub-centers, regional centers, and innovative function cluster districts, leading to an increase trend in travel time, especially the commuting time. 2) The support for the development of new districts on the scale of metropolitan area is still significantly insufficient. The coverage rates of areas, populations and jobs within a 600m radius of urban rail transit stations were only 10%, 15%, and 18% in five new districts of Shanghai in 2022. There is still an obvious gap between the fact and the development goal of 30%, 40%, and 40% proposed in 2035 urban master plan (see Fig. 6).

As the scale of central cities continues to grow and their radiation ability continues to enhance, the transportation circle, living circle, and business circle formed around the functions of central cities are also expanding, exceeding administrative boundaries. Under such circumstance, the demand for inter-administrative region transportation is growing. However, since the establishment of urban governments and administrative boundaries have a direct impact on the implementation of administrative authority and fiscal rules, the facility construction, investment subsidy, and management mechanism of a city rely too much on administrative division. Consequently, a beggar-thy-neighbor phenomenon appears among cities, and it is extremely difficult to construct transportation facilities and coordinate and link services across administrative regions.

3.2 Declining operation efficiency of urban transport system

The demand for individual motorized transportation continues to grow, and migrates from city central areas to outskirts. The outskirts of a city and new districts have become new congested areas. Taking Shanghai as an example, there is always a growing trend in the turnover of motor vehicles in the whole city. From 2010 to 2019, the population increased by 5.4%, and urban roadway mileage grew by 16.6%, Under such situations, the motor vehicle kilometers increased by 70.1%, and the number of motor vehicles increased by 78.4%. The spatial distribution of motor vehicle transportation demand has changed, which is consistent with the trend that residents spread to new districts and new areas. Traffic congestion in outskirts and new districts has worsened, and even exceeded the central urban areas. In addition, the rail transit facilities are not enough in outskirts and new districts. As the population continues to flow in, the traffic condition will not be optimistic over a period of time in the future.

The operation efficiency of public transportation continues to decline. Since 2010, the annual average passenger volume of public buses and trams in China has showed a downward trend, dropping from 183,000 passengers·vehicle^{-1} in 2010 to 108,000 passengers·vehicle^{-1} in 2019. After the outbreak of COVID-19, it has fell to 67,000 passengers·vehicle^{-1} in 2020, which was only about 37% of the peak. The same goes even for megacities with denser populations, such as Shanghai, Beijing, and Shenzhen. Despite the continuous construction of urban rail transit systems, the annual per-capita urban public transportation usage has still stayed down, decreasing by 11%, from 110.8 times in 2013 to 98.1 times in 2019 (see Fig. 7). The public transportation service lacks competitiveness. During rush hour on weekdays in most cities, the operating speed of public transportation is about 65%–75% of that of cars, and the average speed of public buses and trams throughout the “door to door” journey is only 10.7 km h^{-1}.

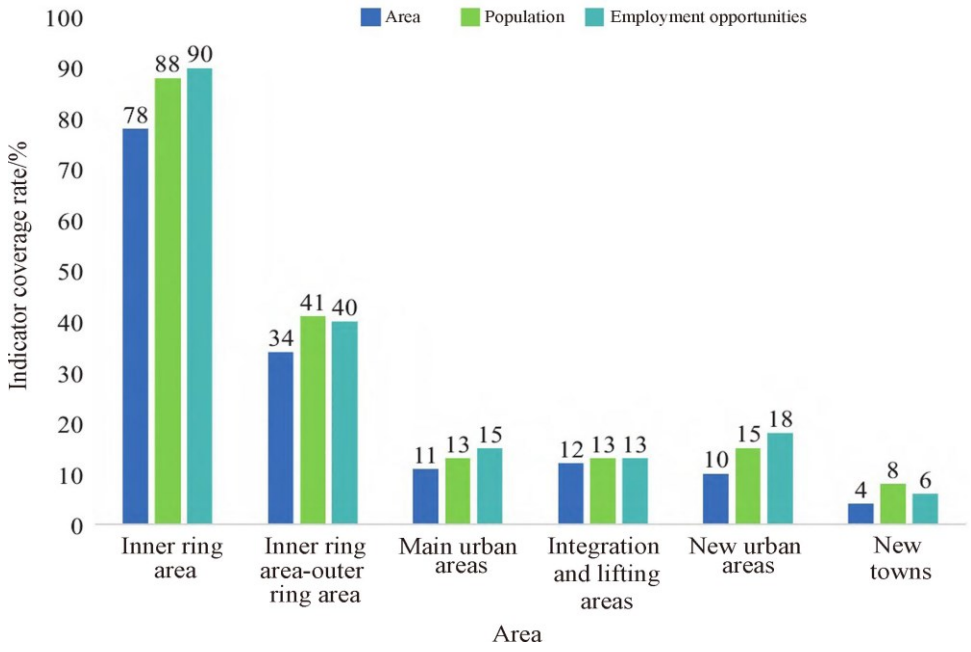

Fig. 6 Coverage rates of various indicators within a 600-m radius of urban rail transit stations in Shanghai in 2022

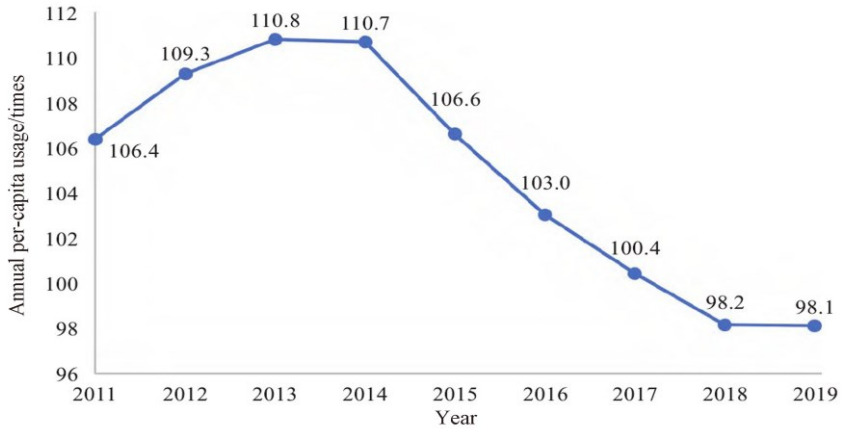

Fig. 7 Annual per-capita public transportation usage in Chinese cities from 2011 to 2019

The development of public transportation emphasizes public welfare. At the same time, the design of service delivery mechanism, service assessment mechanism and other systems is imperfect. So, the input-output efficiency of public transportation has deteriorated sharply, the burden of government fiscal subsidies has been increasing year by year, and the sustainability of fiscal investment has become increasingly prominent. Because the vehicle resource investment increases, the labor cost rises and the passenger volume declines, the cost per person of public buses and trams remains at a high level, and the ticket revenue is far from enough to cover the cost expenditure. In Shanghai, the cost per person of public buses and trams is 3.7 times the ticket price per person, while that in Beijing is about 5 times. A situation faced by urban governments generally is that: the fiscal operating subsidies for public transportation are increasing year by year. The fiscal departments are also under tremendous pressure. The municipal fiscal operating subsidies for public buses and trams in Beijing increased from 7.25 billion yuan in 2008 to 16.39 billion yuan in 2020 (see Fig. 8). The municipal fiscal operating subsidies for public transportation (rail transit + public buses and trams) in Shanghai increased from 2.22 billion yuan in 2010 to 12.4 billion yuan in 2019. Coupled with the amount of subsidies covered by the district-level fiscal departments, the annual fiscal operating subsidies are estimated to be more than 14 billion yuan.

3.3 The need for enhanced transportation governance capabilities

Even under normal circumstances, urban transport backbone systems begin to break down frequently. Normal operation is seriously affected. Taking the rail transit system in Shanghai as an example, from 2012 to 2021, an incident that affected operation occurred every 2.87 days, and for 80% of the failures, the intervals were less than 5 days. A major operational incident with a delay of more than 1 hour occurred every 27.2 days. Abnormal emergencies have a more severe impact on the transportation system. In the face of extreme weather (such as the heavy rainstorm in Zhengzhou in 2021) and public health events, the shortage in the anti-stress ability of the transportation system is exposed. To tackle these issues, the transportation system needs to be resilient and intelligent to address new challenges.

Fig. 8 Operating revenue and municipal fiscal subsidies for bus transit in Beijing from 2008 to 2020

In China, the modernization of urban transport governance still faces many difficulties. They mainly manifest in the unsound legal system, limited price lever adjustment, and policy disputes. At the legislation level, there is a legal controversy about the control of transportation resource prices, such as the parking fee, between national and local governments. The contradiction between market-based pricing and government pricing has limited the autonomy of enterprises. The pricing mechanism cannot flexibly reflect changes in supply and demand. The effectiveness of restrictive policies has also been in doubt, such as car purchase restriction and license plate auction. How to ensure the effective functioning of public engagement, expert argumentation, risk assessment and other aspects is a key challenge in the modernization of urban transport governance, which needs to be addressed urgently.

4 Urban transport development prospects towards 2035

4.1 The increasingly prominent impact of urban transport on urban competitiveness

J.R. Meyer published The Urban Transportation Problem in 1965. In this book, he proposed that, "Whether the economy and society of a metropolis work well or not depends largely on the operation condition of its transportation system. The transportation system not only provides space and services for the flow of people and goods, but also affects a city's growth model and economic activity level by improving regional accessibility". Urban transport assumes the function of passengers (goods) circulation related to inside of cities, the access and conversion of cities. It promotes the connection and exchange of resources and activities related to urban development. Transportation is vital to urban social and economic development, and directly affects the comprehensive strength of a city. In recent years, in the researches of urban competitiveness, much attention is paid to the importance of urban transport development level. The Smart City Index (SCI) issued by International Institute for Management Development (IMD), the City Motion Index (CMI) issued by IESE Business School, and the Global Urban Competitiveness Index System issued by National Academy of Economic Strategy, CASS all incorporate the urban transport development level into overall assessment indicators.

4.2 Changes of urban transport development vision

The essential attribute of a city is that, it is the home that satisfies people's wonderful life. For the high quality development of future urban transport, the core lies in returning to and meeting people's needs. The report of the 20th CPC National Congress stated that "adhering to the principle that the cities are built by the people and are for the people; improving the urban planning, construction and governance level; accelerating the transformation of the development modes of megacities and supercities; implementing urban renewal actions; strengthening the construction of urban infrastructure; and building livable, resilient and smart cities". In 2016, the New Urban Agenda reviewed and approved by the Third United Nations Conference on Housing and Sustainable Urban Development (referred to as "Habitat III") pointed out that "our common vision is cities for all". Future urban transport services should be inclusive and balanced. In addition to meeting daily basic travel demand, they should also satisfy other diversified and personalized travel needs. Oriented by serving people's travel needs, and under the premise of ensuring traffic equality and social inclusion, the delivery of transportation service forms and relevant technology development applications should be guided and regulated, so as to improve urban transport.

City cluster has become the core area and growth pole that supports the development of major economies in the world. The quality of urban transport is directly related to the development benefits and comprehensive level of the entire city cluster. At the city cluster level, a large pattern should be formed, a big network should be optimized, a main channel should be built, and networked transportation services should be established with multiple hubs in one city and multiple centers in one city. Hence, the direct accessibility of intercity travel is improved. To respond to the development requirements of establishing modern metropolitan areas and enhancing city cluster competitiveness, the urban spatial development pattern should be guided with public transportation as the framework, and the urban spatial layout should be led with public transportation corridors, thus driving the agglomeration development of important node cities. A "1-hour" comprehensive transportation service system dominated by multi-standard and multi-level rail transit systems should be constructed comprehensively. This system will efficiently meet multi-type travel needs, including the business travel between regional cities, inter-city commuting in the urban extension areas between adjacent cities, as well as the travel between central cities and outer new towns. The travel service conversion and connection efficiency of transportation hubs will also be improved.

The reorganization of urban internal space renovation aims to build a "15-minute community living circle". The essential requirement of urban transport is not the movement of vehicles, but to serve people's needs and support sustainable urban operations. The research of urban transport should shift from the development orientation of roads and vehicles to

high-quality development that pays more attention to the city's suitability for living and working.

4.3 Revolution of urban transport development models and means

1) Changes of residents' employment and lifestyle in the information age.

Information technology has changed people's travel needs and behaviors. informationization and "Internet +" have profoundly changed the way people think. People place greater emphasis on immediacy, openness, altruism and experience. The demands for traffic information and the requirements for transportation services are also increased. Information technology has changed the way people work and live. New jobs, lifestyles, and travel habits are cultivated, which in turn affects the characteristics of travel needs. Besides, information technology will bring new work scenarios that goes beyond distance. For example, office and conference systems based on virtual vision will create new freelance works, blurring the boundaries between work and life.

2) The development of informationization generates new transportation service supply modes.

Data-driven integrated travel services will become an important travel service mode in the future. A series of new forms of transportation services with shared features keep emerging and develop rapidly, such as data-driven bike sharing, timeshare rental, customized buses, shared parking spaces, and online car-hailing. This not only presents challenges to the organization mode of traditional passenger transportation, but also provides new opportunities for the revolution and innovation of transportation services. Integrated mobility as a service (Mobility as a Service, MaaS) will become a new trend, which is also an important way to improve the quality and efficiency of existing public transportation system.

3) Informationization provides a new way to regulate transportation supply and demand.

Due to the widespread application of information technology, the space of urban transport facilities becomes more flexible and efficient. For example, the demand for parking space is greatly reduced for autonomous driving, while the demand for interactive space between people and vehicles is significantly increased. The organization mode of

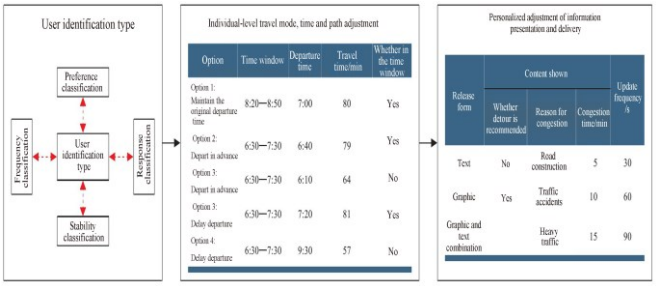

Fig. 9 Technical model for precise regulation of individual-level transportation demand

road space has changed, and the operating rule is no longer dominated by vehicle operation regulation, but shifting towards people oriented. In order to alleviate congestion, continuing to expand the scale of transportation facilities is inefficient and costly. Through the intellectualized reconstruction of existing facilities, a new type of transportation control system is constructed based on big data and total factor information perception. To satisfy the refined governance needs, some measures can be adopted, such as lane-level management for classified users and classified space, and precise regulation of individual-level transportation demand (see Fig. 9). This way, the transportation governance mode can be transformed from simple regulation and single point control to precise recognition, evidence-based decision-making, inspiration and guidance, and active collaboration.

5 Conclusions

Looking back past achievements and gains and losses is intended to look ahead, adapt to the future, and build beautiful, livable, and sustainable cities. Looking towards 2035, under the trend of total digitalization and intelligent development, the urban transport development strategy in China should be committed to meeting people's needs and supporting efficient urban operations. Digital, information-based, and intelligent technologies should be leveraged to drive innovations in developing transportation supply-demand models, governance systems, and governance capabilities, to further promote a deep integration with urban space, economy, society, and ecology and advance towards a vision of high-quality, highly accessible, inclusive, and sustainable development.

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