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Sustainable development evaluation of urban traffic system

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Abstract

Sustainable development is one of the themes of the world today. Considering growing urban traffic problems and urban environmental problems, developing sustainable transport is particularly important. Based on the urban traffic sustainable development theory, an evaluation index system of traffic sustainable development is built using analysis method and testing methods of index system. Then an improved entropy method is used to define the weight of index of traffic sustainable evaluation index system, and an evaluation model is built, which provides a new perspective for urban sustainable development research.

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Keywords: urban traffic system; sustainable development; index system; evaluation model

1. Introduction

Urban traffic system is an important component of urban socio-economic system, and its sustainable development is the precondition of supporting urban sustainable development. Sustainable development will run through all the aspects of urban traffic system planning, construction, running and management. The purpose of comprehensive evaluation on sustainable development of the urban traffic system is to analyse the degree and level of urban traffic system sustainable development and to know whether the society, economy, resource and environment factors of urban traffic system are in coordinated development relationship.

At the same time, comprehensive evaluation as a method of analysis problems is also necessary for the decision-making layer, it should focus on providing information to solve the contradiction between supply and

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demand for the decision makers instead of the result of comprehensive evaluation. The comprehensive evaluation information needs a set of systematic, complete and feasible theories as support.

2. Urban traffic system sustainable development theory

2.1. The connotation of urban traffic system sustainable development

In the increasingly serious cases between urban traffic issues and urban environmental issues, sustainable development of traffic is particularly important. From the standard of the World Bank for evaluating the traffic policies and actions, we can see that the connotation of urban traffic sustainable development mainly includes three aspects of sustainability: economic sustainability, social sustainability and environmental sustainability.

China established the "Beijing Declaration: Chinese urban traffic development strategy " is consistent with the ideas about the traffic development policies and planning should meet four criteria. (1)Economic feasibility: under the premise of the total cost of all resource inputs, should give priority to the investment projects of the highest economic return. (2)Financial affordability: formulating traffic system planning and project plans should be based on viable investment and operation strategies. (3)Social acceptability: traffic service should meet the needs of all aspects of society, especially to consider the demand of social low-income residents and the weak. Traffic development should minimize the negative effects on society, and in particular to avoid housing and other commercial and industrial demolition caused by traffic building. (4)Environmental sustainability: should implement actions and countermeasures which have little influence on public health and living environment, and which have low consumption on natural resources.

Its connotation can be understood as the development of urban traffic system should meet the ongoing needs of people's economy and social activities based on effective utilization of resources and be coordinate with the environment.

2.2. The operation framework of urban traffic system sustainable development

The essence of urban traffic system sustainable development is the coordination of the interaction relationship between urban traffic system and other systems, the relationship as shown in Figure 1.

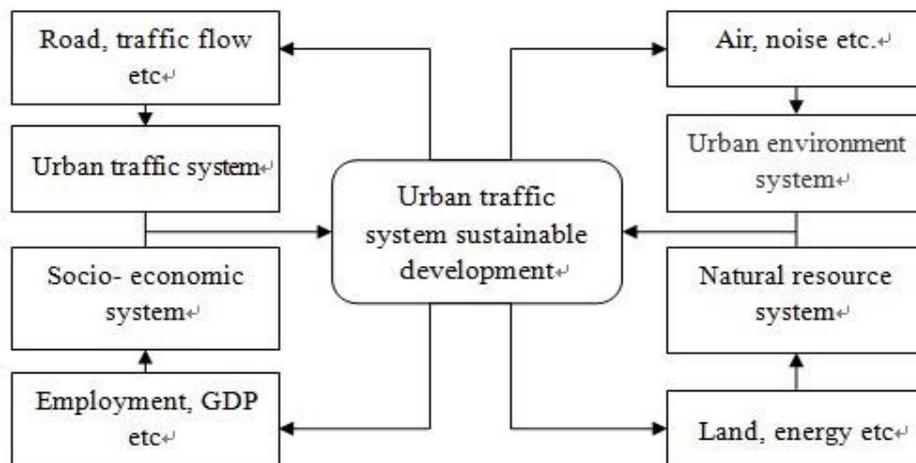


Fig. 1. The operating framework of urban traffic system sustainable development

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