



## Analysis of Environmental Factors Which Affect the Development of Ride-sharing Platform in China Based on ISM model

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### Research Highlights

This paper mainly uses Interpretative Structural Modeling Method (ISM) model to clarify environmental factors which affect the development of ride-sharing platforms in China, and to understand their hierarchy and importance order. According to the calculation of matlab, there will be a 7 layers ISM diagram for those environmental factors, from the diagram, the industrial economic strength, core technology and support, infrastructure construction, internet technology implementation, industry policies, laws and regulations, industry management level are the most key factors which affect the development of ride-sharing platform in china.

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### Research Objectives

Ride-sharing is one of the biggest hot pot of sharing economy, as a ride-sharing platform, Uber has become the leading enterprise in the sharing economy. But in China, Uber didn't pay attention to localization for the users, quickly, was replaced by DiDi. Now DiDi has been the biggest ride-sharing platform in China, but in the second half of 2018, several serious security problems happened, two young women were raped and killed by DiDi drivers, the entire ride-sharing platform has been seriously doubted. From Uber was replaced by DiDi to entire ride-sharing industry was seriously doubted, people will ask what are the environmental factors which affect the development of ride-sharing platforms? And what are the most key factors? This paper will try to answer those questions.



## Methodology

Interpretative Structural Modeling (ISM), decomposes the complex system into several subsystem elements, and use people's practical experience and knowledge as well as the help of the computer to finally form a multi-level hierarchical structural model. This model is mainly based on qualitative analysis and belongs to the structural model. It can transform fuzzy ideas and views into intuitive models with good structural relationships. By using the ISM model, the environmental factors affecting the development of ride-sharing platform can be clarified, and their levels and relevance can be analyzed.

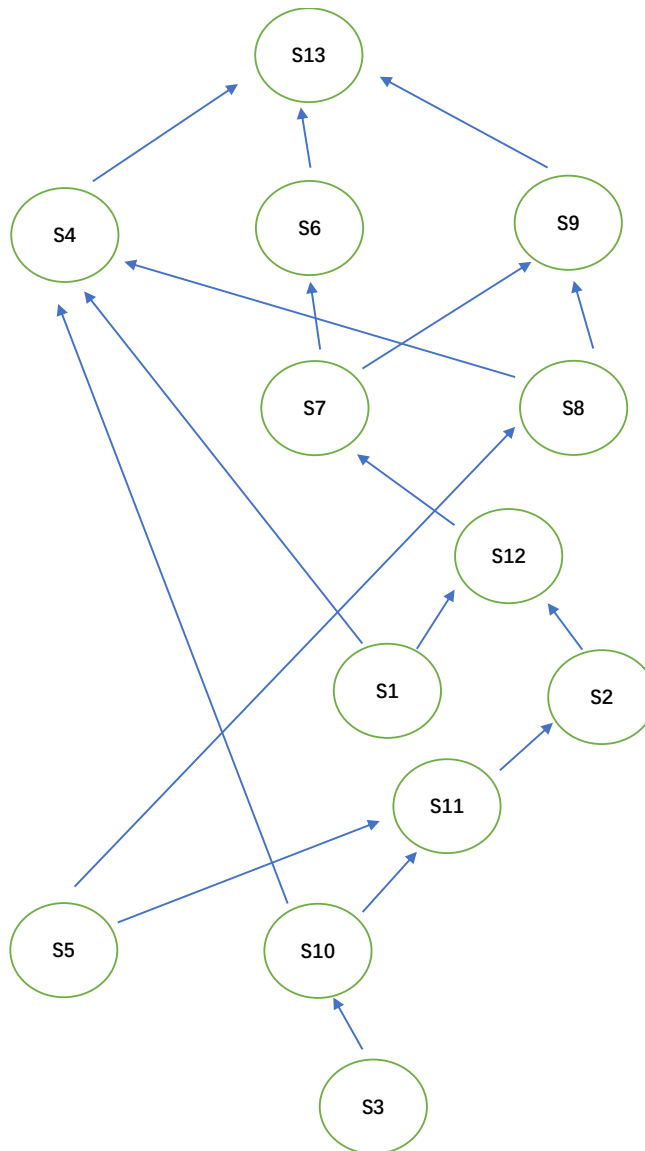
The basic analysis steps of the ISM model are:

- (1) Search relevant documents, expert seminars and case studies at various levels, compare each other, and then explore the environmental factors affecting the development of ride-sharing platform.
- (2) Analyze the identified index factors to determine the mutual relationship among the elements, and then construct the adjacency matrix.
- (3) Find the reachable matrix by the adjacency matrix.
- (4) According to the reachability matrix, hierarchically divide the entire structure.
- (5) According to the hierarchical division, find the directional relationship path diagram between the elements and draw the ISM structure diagram.



## Results

According to the calculation of matlab, the ISM diagram can be obtained, as shown below:



## Findings

According to the ISM diagram, the industrial economic strength is located at the 7th floor of the structural ISM diagram, indicating that it is the most fundamental factor affecting the development of ride-sharing platform. Core technology and support, infrastructure construction, internet technology implementation are located from 5<sup>th</sup>-6<sup>th</sup> floor, indicating that these three factors provide possibilities for the development of ride-sharing platform. Industry



policies, laws and regulations, industry management level are located at the fourth level, they are the key for the safety of the users, government and the entire industry need pay more attention.

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