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Frustrated with increased parking problems, unstable gasoline prices, and stifling traffic congestion, a growing number of metropolitan city dwellers consider utilizing the mass transit

system. Reflecting this sentiment, a ridership of the mass transit system across the United States has been on the rise for the past several years. A growing demand for the mass transit system, however, necessitates the expansion of service offerings, the improvement of basic infrastructure/routes, and the additional employment of mass transit workers, including drivers and maintenance crews. Such a need requires the optimal allocation of financial and human resources to the mass transit system in times of shrinking budgets and government downsizing. Thus, the public transit authority is faced with the dilemma of “doing more with less.” That is to say, the public transit authority needs to develop a “lean” strategy which can maximize transit services with the minimum expenses. To help the public transit authority develop such a lean strategy, this report identifies the best-in-class practices in the U.S. transit service sector and proposes transit policy guidelines that can best exploit lean principles built upon best-in-class practices.

**Mass transit agencies that utilize van pooling services or ride sharing programs tend to be more efficient.**

## Study Methods

This research project measures the comparative efficiencies of 515 mass transit systems across the U.S. in terms of their capability to utilize human, capital, and physical resources (given budgetary constraints) using both the Charnes, Cooper, and Rhoads (CCR) and the Banker, Charnes, and Cooper (BCC) versions of the data envelopment analysis (DEA) model. In addition, this project identifies which exogenous variables, such as demographic profiles (e.g., service area and population density) and local economic conditions (e.g., poverty rate), impact the comparative efficiencies of mass transit systems using Tobit regression analysis.

## Findings

Based on the analysis of the national transit data, this study found:

- Economies of scale alone did not dictate mass transit efficiency. In other words, the scale of mass transit operations or the size of mass transit agencies was not an influencing factor for mass transit efficiencies.
- Mass transit agencies that utilized van pooling services or ride sharing programs tended to perform better, whereas mass transit agencies that heavily used light-rail tended to perform poorly.
- Commuter rail and demand response taxi services tended to create greater transit efficiencies than other modes.
- Private operations of mass transit systems did not necessarily enhance transit efficiency.

## Policy Recommendations

Mass transit efficiency can be improved by taking the following actions:

- Transit authorities should leverage car or van pooling services rather than solely investing in transit infrastructure and broadening service areas and offerings.
- Transit authorities should consider building a long-term partnership with local private enterprises to utilize their expertise and financial resources, which will help enhance transit efficiencies.
- Outsourcing or privatizing transit services will not necessarily improve transit efficiencies, which should be considered when transit authorities are aligning decisions and dollars.



Clarksville Transit System

## About the Authors

Hokey Min, PhD, is the James R. Good Chair in Global Supply Chain Strategy in the College of Business at Bowling Green State University in Ohio. He is a prolific author who is credited with more than 185 refereed journal publications.

## To Learn More

For more details about the study, download the full report at [transweb.sjsu.edu/project/1235.html](https://transweb.sjsu.edu/project/1235.html)

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