

# Freight Demand Model for Southern California Freeways with Owner–Operator Truck Drivers

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The research purpose is to evaluate the behaviors of owner–operator truck drivers to enhance decision-making regarding their route choices. The main objective of this research is to implement the stated preference survey method in the field to estimate the values the truck drivers placed on time, reliability, and safety measures for owner–operator truck drivers' travel routes, and to provide transportation agencies with meaningful data on their behaviors and patterns.

## Study Methods

This study evaluates the demand for truck-only toll lanes in Southern California freeways with owner–operator truck drivers. The study implemented the stated preference survey method to estimate the values of time, reliability, and safety measures

for owner–operator truck drivers' travel routes by using various scenarios geared towards assessing the values. The project team met face-to-face with owner–operator truck drivers near the Ports of Los Angeles and Long Beach to understand the drivers' perspectives regarding truck-only toll lanes on Southern California freeways. The complete sets of 31 survey data are used for statistical data analysis (ANOVA and two sample t-tests).

*Do owner–operator truck drivers want truck-only toll lanes?*

## Findings

Owner–operator truck drivers prefer to take the truck-only toll lanes on average of 75.27% under each scenario having different route choice

characteristics. The tolerated toll fees range from \$4.40/hr to \$30.97/hr during weekdays, while those fees range from \$4.40/hr to \$30.48/hr during weekends. The tolerated average toll fees are \$13.77/hr and \$12.82/hr for weekdays and weekends, respectively. The analysis results show that owner–operator truck drivers are willing to pay toll fees for the routes used in four comparisons out of six comparisons, despite sharing a common origin and destination. The routes used in four comparisons include the routes from Port of Long Beach to Compton on I-710, Port of Long Beach to Van Nuys on I-405 with VOT and VOR, Port of Long Beach to Van Nuys on I-405 with VOR and safety measures, and Port of Los Angeles to San Diego on I-5 with no differences among the measures considered. The reason is that the routes considered in the comparisons are more important than measures considered for their route choice decisions. The results also indicate that the highest toll fees per mile on any day that drivers are willing to pay are \$0.31/mile with \$18.35/hr, \$0.30/mile with \$8.94/hr, and \$0.22/mile with \$11.01/hr for the values of time, reliability, and safety, respectively.

### Policy Recommendations

The study can be used as a steppingstone for large-scale data collection and analysis for legislators and transportation agencies, as the behaviors of owner–operator truck drivers and their route choice characteristics enable a better understanding of the utility of (and demand for) truck-only toll lanes.

### About the Authors

Dr. Joseph J. Kim, PE (PI) is Professor of the Department of Civil Engineering and Construction Engineering Management at California State University Long Beach. He was involved in supervising two undergraduate students and was responsible for overall project coordination, assuring successful project completion, and preparing the final MTI report.

Samuel Dominguez is a senior civil engineering student at the Department of Civil Engineering and Construction Engineering Management at California State University Long Beach who contributed to accomplishing the goals of this research project.

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### To Learn More

For more details about the study, download the full report at [transweb.sjsu.edu/research/1931](https://transweb.sjsu.edu/research/1931)



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