



UNIVERSITY TRANSPORTATION CENTER RESEARCH BRIEF

PROJECT TITLE: Understanding Freight Behavior in the Pacific Northwest: An Evaluation and Application of EROAD Data to Freight Demand and Forecast Modeling

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Background

The passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 initiated an increasing interest in understanding freight movements within statewide planning efforts, particularly the evaluation of current and future freight transportation capacity necessary to ensure freight mobility. Since ISTEA, freight movements have been on the rise. Domestically, freight moved by truck in 2015 accounted for 66% of goods moved in terms of tonnage and 73% of goods moved in terms of value (Worth et al., 2016). In addition, ton-miles of commodities moved by truck from 2010 to 2015 is expected to have a 3% average annual growth rate, up 2% from the average annual growth rate of 1% from 2000 to 2010. This continued growth creates challenges in allocating limited state funds to investments and improvement of the transportation system. Therefore, fully understanding freight demand is critical to transportation agencies to plan and forecast accurately, effectively, and accordingly. This task is acutely dependent on the quality of data, however, there is an intrinsic shortcoming in regard to the availability of quality freight data.

As a result from this fundamental lack in efficient data, the application of freight demand models can be rather limited. In most cases, transportation agencies, such as State Departments of Transportation (DOTs) and private enterprises, are pressed to use data that is published by federal agencies (e.g., Freight Analysis Framework), purchased through a private data source related to freight (e.g., American Transportation Research Institute), or collected through surveys of freight operators and/or commercial motor vehicle drivers. As such, the processes of collecting efficient freight movement data can be expensive and very labor-intensive.

Hence, the overall objective of this work is to utilize a previously unused private data source to analyze freight movements in the Pacific Northwest.

Research Project

In summary, this research's objective will be achieved through the application of a private data source acquired as part of an ongoing study with EROAD. EROAD is a company that develops and implements technology to modernize traditional paper-based systems within the trucking industry. As part of this modernization, EROAD collects the data used for modeling and forecasting freight movements. However, EROAD data has yet to be used for such an application. This will be accomplished through (1) a comprehensive existing state-of-the-art and state-of-the-practice as it relates to freight data, both in terms of analysis and collection, (2) a massage of EROAD data and conduct statistical analyses for freight movement analysis, and (3) identify freight movements and detailed supply-chain analyses of key commodities. It's envisaged that two journal manuscripts will result from this work.

