

## **Temporal Transferability of Vehicle Ownership models and Trip Generation Models for Boston Metropolitan Area**

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### **Abstract**

In this study, we assess the temporal transferability of vehicle ownership models and trip generation models for Boston metropolitan area from 1990 to 2010. Through statistical tests, we find significantly changed preferences in household vehicle ownership choice. The effects of most socio-economic and demographic factors, and regional location factor have evolved; while the effects of local built environment factors and transit access are stable. Trip rates have changed over time, with decreased home-based work, home-based shopping, home-based bank and personal business, home-based social, home-based eating and non-home-based work trips; and increased home-based recreational and home-based work-related trips. The prediction tests suggest that failing to consider preference changes cause significant bias in forecasts. Different model specifications have shown a modest range of variability in prediction outcomes, suggesting model specification uncertainty has less influence on forecasts than behavior uncertainty.

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