Journal of Public Transportation Volume 10 No. 4, 2007 27-50

Diagnostic Evaluation of Public Transportation Model Choice in Addis Ababa

by Mintesnot Gebeyehu and Shin-ei Takano

The authors of this article examined mode choice in the city of Addis Ababa, Ethiopia, comparing the available options: bus and shared taxi. They developed and ordered logit model to examine perceptions of bus conditions, and then used this as a determining factor for mode choice in developing a binary logit model to analyze rider choices. They determined that rider perceptions had a significant influence on mode choice.

They performed discreet choice analysis, and determined traveler choice is generally explained by 3 things: trip characteristics (length, time of day, and purpose), the socioeconomic characteristics of the traveler, and the state/availability of the transport system.

Their process was to apply their mode choice binary logit model, then their ordered logit model on bus conditions (convenience model, fare model and frequency model) and then use these to conduct a diagnostic analysis comparison the perception model to the mode choice mode.

They found that as a person’s income increased, their likelihood of choosing the bus decreased. They also found that as a person’s age increase, so did their likelihood of perceiving the bus as inconvenient.

The also found that the longer the trip, the more likely a rider was to choose the bus.

They recommend that an increase in the spatial coverage of the bus network and an increase in frequency could lead to an increase in ridership.

Transport Policy 37 (2015) 111–120

Emerging travel trends, high-speed rail, and the public reinvention of U.S.transportation

by Camille Kamga

This paper discusses modal imbalance as a structural problem. Kamga uses the metaphor of a "broken stool" resting precariously on two legs (cars and planes) while neglecting a third (trains) that could provide crucial stability. He illustrates that the U.S. transportation system isn't just car-dependent, it's also unstable because each mode isn't operating in its most efficient niche.

HSR works best for medium-distance trips (roughly 100-500 miles), which Americans primarily make by car or plane despite both being poorly suited to this range. It’s a long distance for a car ride (other than a road trip taken for pleasure) and too short to really justify air travel. Planes are additionally a hassle due to the need for transportation to/from airport and the security processes involved. Cars are subject to traffic delays and the risk of accidents. The paper illustrates rail being the optimal mode for this range empirically through data on the Northeast Corridor. When Amtrak’s Acela was introduced, it quickly captured 75% of the Washington-NYC rail/air market precisely because it was the right tool for the job.

The second major insight is about "positive feedback loops" and “the transit leverage effect”. HSR stations fundamentally reshape urban development patterns and amplify the effectiveness of local transit systems. Kamga argues that improving access to rail stations increases ridership more than improving rail service itself, and that HSR hubs catalyze transit-oriented development that makes local transit viable, which in turn feeds more riders to HSR. This creates a virtuous cycle where density rises, per capita Vehicle Miles Traveled (VMT) fall, and the entire regional transportation network becomes more efficient. The paper positions HSR not as a standalone technology but as a catalyst that could trigger systemic transformation, essentially arguing that infrastructure shapes behavior as much as behavior demands infrastructure.

Having written this paper in 2015, Kamga has largely since been proven correct. At that time, the decrease in car ownership and trend towards living in cities was debated as potentially a temporary phenomenon, however this trend has remained steady since.