

# **The Impact of Bus Transit on Employee Turnover: Evidence from Quasi-Experimental Samples**

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**Abstract:** This analysis investigates the relationship between fixed-route bus transit and employee turnover using data from quasi-experimental samples. We expect that counties with fixed-route bus transit will have lower turnover rates because transit offers an affordable means of transportation to workers without automobiles, allowing these workers to reach job sites. Panel regression models and county-level data from Illinois, Indiana, Michigan, Ohio, Pennsylvania and Wisconsin from 1998 through 2010 are used to test this hypothesis. We find that the size of the fixed-route bus system (measured as real per capita operating expenditures) is negatively related to employee turnover rates: An increase in bus systems’ per capita operating expenditures is associated with a decrease in employee turnover. The implications of these results are that businesses receive benefits from public bus systems that should be further explored. Decreases in employee turnover represent cost savings to businesses by reducing the costs associated with training new workers and rebuilding firm-specific knowledge. These results suggest that access to fixed-route bus transit should be a component of the economic development strategy for low income communities not only for the access to jobs that it provides low-income workers but also for the benefit provided to businesses that hire these workers.

**Keywords:** Employee Turnover, Transit, Bus

**JEL Classification:** R42 - Government and Private Investment Analysis; R58 - Regional Development Policy; H54 - Infrastructures; Other Public Investment and Capital Stock; R11 - Regional Economic Activity: Growth, Development, and Changes; R49 Transportation Systems - Other

## Introduction

The suburbanization of manufacturing and retail employment has had a dramatic impact on job accessibility for low-income individuals. For low-income workers access to transportation may limit the type and number of available jobs to which they have access. This would ultimately influence income levels, and the duration of employment. Economic literature has identified a spatial mismatch hypothesis suggesting that that geographic, racial (and income) segregation is a primary determinant of unemployment and poverty for many households. The residential location of households with available workers is distant from the location of available jobs which results in relatively high commuting costs associated with employment opportunities (Kain 1968). Public bus systems often fill this gap offering an affordable means of transportation for workers without access to automobiles to reach job sites.<sup>1</sup>

An important policy question is whether the jobs available to the urban poor suffer higher employee turnover rates due to lack of reliable transportation. The broader benefits of fixed-route public bus systems are not typically captured in standard cost-benefit analysis.<sup>2</sup> The benefits that public transit provides to businesses have received little attention from researchers. Decreases in employee turnover represent cost savings to businesses by reducing the costs associated with hiring and training new workers and rebuilding firm-specific knowledge.<sup>3</sup> Costs associated with training new workers are estimated to be a significant share of annual employment costs (Tziner

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<sup>1</sup> Research in the planning and urban studies literature suggests transportation access plays a role in employee turnover. See Blumenberg and Manville, 2004; Kawabata, 2003; Sawicki and Moody, 2000 and Ong and Blumenberg, 1998.

<sup>2</sup> Hicks, Faulk and Kröll (2013) include estimates of reduced costs associated with lower employee turnover in the benefit-cost analysis they perform for Indiana fixed-route bus systems.

<sup>3</sup> Turnover costs include both direct and indirect costs (Boushey and Glyn 2012, HBE 2002, Branham 2001). Direct costs include separation costs, severance pay, higher unemployment taxes, overtime for other staff or temporary staffing to cover former employees duties, advertising, search and agency fees, screening applicants, interviewing, background checks, testing, applicant travel and relocation costs, and training costs. Indirect costs are more difficult to measure and include lost productivity, reduced quality, errors or waste as new employee learns job, reduced morale, lost clients and lost institutional knowledge, customer service disruption.

and Birati 1996). In their review of case studies and research papers estimating costs associated with turnover, Boushey and Glynn (2012) find that turnover costs are 20 percent of salary for most workers, but can be considerably higher for jobs that require specialized skills and training, and higher levels of education. The objective of this analysis was to examine whether access to public transit had discernible impact on employee turnover in firms.

This research contributes to the literature in the following ways. First, we examine how public transit benefits employers. Previous research has examined the benefit of transit from the worker's perspective, particularly welfare recipients. Second, this study explicitly examines the role of fixed-route bus transit in employment outcomes. Most other studies have not differentiated between rail and bus. Fixed-route bus transit can be adjusted to serve new or growing industrial parks or retail centers so that over time bus transit is more flexible than rail transit. Finally, we examine the impact of transit in small metropolitan areas. Previous research has focused primarily on large metropolitan areas.

The remainder of the paper is organized as follows: The next section provides a brief review of the literature related public transit and employment. The third section introduces the modeling strategy that we use to investigate the impact of transit on employee turnover. The fourth section describes the data and samples used in the analysis followed by a discussion of the results. The final section provides conclusions and implications.

## **Literature**

Studies examining the relationship between employment outcomes and public transit have focused on job accessibility. Several studies have focused on the benefits that public transit provides to welfare recipients. The findings vary with some studies finding that transit has a positive impact on employment while other studies find no association. Sanchez, Shen and Peng (2004) examine the relationship between transit access and employment status of TANF recipients in six large metropolitan

areas and find that access to fixed-route transit and employment concentrations has no association with employment outcomes. Bania, Leete and Coulton (2008) come to a similar conclusion in their examination of job access and employment outcomes for welfare recipients in Cleveland, Ohio. Studies such as Sanchez (1999) find that transit access (bus and rail) is a significant determinant of labor force participation in Atlanta and Portland. Kawabata (2003) found that transit-based job accessibility increased the employment probability for low-skill workers without automobiles in Los Angeles and San Francisco, California but not Boston.

Other studies have focused on broader impacts of transit. Faulk and Hicks (2010) find that counties with bus systems have lower unemployment rates, lower growth in food stamp payments and higher population and employment growth relative to counties without bus systems but no impact on income which they suggest is due to supply side effect in the labor market.

A few studies examined how investment in transportation affects factor (labor and capital) productivity. Venables (2007) showed that transportation investment leads to higher levels of employment which generates higher productivity due to the external benefits (agglomeration externalities) -- improved links between firms and increased employment densities -- associated with higher levels of employment. Graham (2007) extended this analysis to estimate the impact of increased employment density on productivity and estimated urbanization elasticities of 0.129 economy wide, 0.07 for manufacturing and 0.197 for service sectors. These studies focused on transportation investment generally not bus transit specifically, but implications of these studies are that if transit does increase employment density, there are external benefits that are not usually quantified in cost benefit studies related to transit.

Empirical literature linking job turnover to transit availability is sparse. While there are a significant number of anecdotal and case study analyses which identify job turnover with transportation availability, other than forming a hypothesis, these studies do not shed light on the empirics of the issue.

## Modeling Strategy and Econometric Considerations

Our approach is to use panel regression models to examine the effects of transit on employee turnover in firms. In the model, we control for the size of the transit system and county (cross section) fixed effects which take into account differences among counties that do not vary over time. The full model takes the following form:

$$\overline{T}_{it} = \alpha + \beta_{1it}A + \beta_{2it}L + \beta_{3it}I + \varphi t + \theta\delta_{t-1} + \gamma_i + \varepsilon_{it} \quad (1)$$

Where  $\overline{T}_{it}$  is the average employee turnover rate in county  $i$  in year  $t$ . The full model specifies employee turnover as a function of an intercept, access to public transit, labor market characteristics, industry characteristics, a time trend, autoregressive terms, cross-section (county fixed effects dummies) and a white noise error term. We estimate several variations of this basic specification to ensure the robustness of our results. These successively include an autoregressive and cross sectional fixed effects, initially with only the bus access variable, and then each of the additional variables described below.

Our measure of access to bus transit is real operating cost per capita. Higher operating expenses indicate that a bus system covers more territory or has more frequent coverage of existing routes both of which increase the availability of transit to potential users. We expect counties with larger bus systems to have lower employee turnover rates because transit dependent workers will be able to use transit to get to work. This approach requires controls for other factors which may influence job turnovers.

Employee turnover rates are also related to labor market conditions in a county particularly the availability of jobs. The unemployment rate is a measure of workers potentially available for employment. When the unemployment rate is low, workers can easily change jobs, whereas when the unemployment rate is high, finding a different job is more difficult. We expected the employee turnover to be negatively related to the unemployment rate.

The share of employment in manufacturing in a county and the share of employment in retail control for county level differences in industrial composition. We view this solely as a control variable within this sample.

We expect there to be a positive relationship between the retail share of employment and the employee turnover rate. Since retail employment is predominantly part-time, workers have a weaker attachment to jobs (Tilly 2008). As the retail share of total employment increases, we expect the turnover rate to increase.

The average manufacturing wage and the average retail wage are measures of labor costs and labor productivity. Higher productivity is reflected in higher wages. We expect there to be a negative relationship between employee turnover rates and average wages. The turnover rate decreases as the wage increases.

We also face some econometric considerations which are worthy of mentioning. We consider few conditions in which endogeneity between our main regressor and job turnover would be readily apparent. While poverty or low educational attainment may be endogenous to public financing of bus transit, we can see no such transmission mechanism for job turnover from transit, and so assume exogeneity. Spatial dependence across the sampled cities might appear an obvious concern. However, the a few exceptions the treatment group of the samples are non-conterminous, and so we treat these as independent observations cross sectionally.

### **Data and Sampling Method**

We investigate the relationship between public transit accessibility and employee turnover in counties with small cities. We construct two samples of counties with and without public fixed-route bus systems. The treatment group is counties with fixed-route bus systems during at least one year of the study period, populations between 50,000 and 125,000 in 1950

and cities with boundaries primarily in one county and includes the same counties in each of the two samples. The control group is counties without fixed-route bus systems and is constructed using the NEG method or the propensity score. Counties with rail transit are excluded from the sample.

The first control group is constructed using a nonequivalent group design (NEG) of the type presented by Reed and Rogers (2003), Hicks (2003). In these articles, univariate comparisons between the treatment and control groups are performed. We extended this approach conducting a multivariate scoring process on two time varying samples in which bus service was offered (Faulk and Hicks 2010). This process was designed to limit threat to internal validity of the selection by including a time period prior to federal subsidization of municipal bus service. In this approach we selected a control sample by matching all non-treatment counties on most proximal personal income, per capita income, total employment and growth in each of these variables. Each county was scored on each attribute and a control sample selected from the highest scoring counties. These counties qualified for inclusion into the NEG as they demonstrated the most similar set of economic characteristics from a period extending more than a decade prior to through the end of the study period. This provides a control group of counties that are most similar, but without a transit system.

The second control group is constructed using propensity score matching. The propensity score matching model uses 1970 county characteristics to estimate the influence of specific factors on the probability that a county will have bus transit during the study period. The propensity score estimates the likelihood that any county will have bus transit based on the characteristics of counties that actually have transit. Matching counties based on the likelihood that they have bus transit should control for the factors that predisposed particular counties to

have bus transit. Using this method, each county with transit is matched to the county with the nearest propensity score that does not have transit.

We limit our analysis to counties in the upper Midwest (Illinois, Indiana, Michigan, Ohio, Pennsylvania, and Wisconsin) to examine the relationship between bus transit and employee turnover. We limit analysis to this region to control, in part, for regional differences in local government structure, industrial composition and cost of living differences. This is the rustbelt region of the United States and is a relatively homogenous region from which to evaluate effects of public transportation systems. Ideally, municipal data or data associated with the geography of a transit area would be used. However, since a limited number of variables are available for cities or transit areas, the county in which the city or transit area is located is the unit of analysis in this study.

The dataset is an unbalanced panel due to differing start dates of the Quarterly Workforce Indicators in each state but spans 1998 to 2010 for the longest time series. The years for which we have data for each state are shown in appendix table 1.

We use county-level data from Census, BEA's regional economic database and BEA's Quarterly Workforce Indicators (QWI) to examine the impact of bus access (measured as real operating expenses on fixed-route bus systems in a county) and employee turnover. We use data from the National Transit Database to aggregate data on fixed-route bus systems to the county level. Real operating expenses per capita ranges from \$0 to \$56. Per capita real operating expenditures averaged \$11.02. Descriptive statistics are shown in table 2.

## Results

Tables 3 and 4 show the results of the regression analysis. Table 3 shows the results for counties with small cities that have bus transit and a control group developed using the NEG technique described above. Table 4 shows the results for the sample using propensity score matching.

Results from the NEG small cities samples show that employee turnover rates are lower in counties with bus transit. The coefficients range from -0.02 to -0.05 among the five models estimated. This is a modest but not immaterial impact on turnover indicating that access to bus transit reduces employee turnover. An additional \$10 per capita expenditure on bus transit would reduce turnover by just 0.29 percentage points (models 4 and 5).

Results for the propensity score sample are similar -- employee turnover rates are significantly and negatively related to access to bus transit. A dollar increase in per capita operating expenditures for a bus system decreases employee turnover by 0.03 to 0.05 percentage points.

The other estimation results are also important to confirm the overall usefulness of the models. In particular, inverse relationship between turnover and unemployment rate held across both samples and all specifications indicating that employee turnover rates increase as the unemployment rate decreases. This was anticipated following a long body of research beginning with Dow and Dicks-Mireaux (1958). A lower unemployment indicates that it is easier for a worker to find another job.

The control variable of manufacturing share was negative and highly significant, while retail share was positive and significant. These variables control for variation in industrial structures in the samples. As the manufacturing share of total employment increases, the turnover rate decreases. The retail share of employment is positively related to the employee turnover rate in a county. Because retail employment is often part time, workers in this sector often don't have a strong attachment to employers which explains the increasing turnover rate.

There are differences in the average earnings results between these two samples. In the propensity score sample average manufacturing earnings is a negative and statistically significant determinant of the employee turnover rate indicating that a dollar increase in average manufacturing earnings decreases employee turnover by 0.098 percentage points. The results suggest that higher earnings in this sector decrease employee turnover. In the NEG sample average manufacturing earnings is negative but not significant in two of the three models in which this variable is included. In the propensity score sample, as average retail earnings is positively related to the turnover rate, although the effect is very small. In the NEG sample the relationship between average retail earnings and the turnover rate is negative and not consistently significant. The high proportion of part-time workers and variability in average wages are likely driving these different results. The descriptive statistics (table 2) show that variation in average retail earnings in counties without transit is much higher in the propensity score sample than the NEG sample.

The recession dummy is also positive and significant in the propensity score sample indicating that turnover is higher in recession years, and positive and close to significant for the NEG sample. This result is likely related to higher levels of involuntary turnover during recessions.

#### *The Impact of Transit on Employee Turnover Costs*

The results of the regression analysis suggest that employee turnover decreases by 0.02 to 0.03 percentage points for each dollar increase in per capita operating expenditures on transit. We use these results to estimate the impact of transit on employee turnover costs for manufacturing and retail employees. In their review of the literature Boushey and Glynn (2012) find that turnover cost is 16% of an employee's annual salary among positions earning \$30,000 or less. In counties with transit in our six-state study region, average manufacturing earnings is approximately \$30,000 per year and average retail earnings is approximately \$11,500 per year.

The availability of fixed-route public transportation reduced employee turnover in manufacturing by 1,100 to 1,200 workers per year over the study period in counties with small cities within the six-state region included in this sample. The associated reduction in manufacturing turnover costs is \$5.3 million to \$6.1 million per year. The availability of transit reduces retail turnover by 900 to 1000 workers. The reduction in turnover costs is \$1.7 to \$1.9 million.

## **Conclusion**

This paper reports the results of a straightforward test of the role of transportation access on employee turnover at the county level from two samples of U.S. counties from 1998 through 2010. The samples include the same counties with transit (treatment group) but different counties without transit (control groups). The two control groups are constructed using the nonequivalent (NEG) design technique and propensity score matching. In both samples we find that measures of the size of the fixed-route transit system (real per capita operating expenditures) effects employee turnover in the county: An increase in bus systems' per capita operating expenditures is associated with a decrease in employee turnover. We also find that lower unemployment rates similarly affects turnover, which we view as confirmation of the ability of our model to tease out readily expected outcomes in these samples. We also find industrial structure influences turnover as evidenced by our control variables for the share of manufacturing and retail in each county.

The implications of these results are that businesses receive benefits from public bus systems that should be further explored. Decreases in employee turnover represent cost savings to businesses by reducing the costs associated with training new workers and rebuilding firm-specific knowledge. These results suggest that access to fixed-route bus transit should be a component of the economic development strategy for low income communities not only for the access to jobs that it provides low-income workers but also for the benefit provided to businesses that hire these workers.

Despite what we view as robust and non-trivial findings, we believe that much additional exploration is needed. Studies of individual rider behavior which estimate the role access to transportation plays in the propensity to work would be an ideal addition to this literature. Likewise, other measure of firm performance and bus access, such as job tenure and location decisions are warranted.

**Table 1: Variables definitions and sources**

<b>Variable</b>	<b>Definition or Calculation</b>	<b>Source</b>
Average Turnover Rate	Average of quarterly employee turnover rate in a county	Quarterly Workforce Indicators
Per Capita Real Operating Expenditures (proxy for size of fixed-route bus system)	Total real operating expenses for the fixed-route bus systems in a county adjusted for inflation divided by population	National Transit Database
Unemployment rate (%) (proxy for labor market conditions)	Percentage of the labor force that is unemployed in county <i>i</i>	Bureau of Labor Statistics
Manufacturing share of total employment (%)	Manufacturing employment divided by total employment	Bureau of Economic Analysis
Average manufacturing earnings (Real \$)	Manufacturing earnings divided by the number of manufacturing workers adjusted for inflation.	Bureau of Economic Analysis
Retail share of total employment (%)	Retail employment divided by total employment	Bureau of Economic Analysis
Average retail earnings (Real \$)	Retail earnings divided by the number of retail workers adjusted for inflation	Bureau of Economic Analysis
Recession Dummy	=1 if year is 2001, 2008 or 2009 =0 otherwise	National Bureau of Economic Research

**Table 2: Descriptive Statistics**

<b>TOTAL</b>	<b>Small Cities Sample 1: Nonequivalent Group Design</b>			<b>Small Cities Sample 2: Propensity Score</b>		
	<b>Mean</b>	<b>Std. Dev.</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Obs</b>
Average Turnover Rate (%)	8.70	1.19	939	8.65	1.25	931
Per Capita Real Operating Expenditures (Fixed-route bus system)	5.67	8.65	939	5.72	8.67	931
Unemployment rate (%)	6.20	2.57	939	6.34	2.65	931
Manufacturing share of total employment (%)	17.58	7.73	936	18.03	8.37	921
Average manufacturing earnings (Real \$)	29,056	6,503	935	29,011	6,318	921
Retail share of total employment (%)	13.00	3.10	935	12.85	3.00	921
Average retail earnings (Real \$)	11,200	1,262	935	11,545	3,584	921
Recession Dummy	0.25	0.43	935	0.25	0.43	921
<b>without fixed route bus systems</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Obs</b>
Average Turnover Rate	8.55	1.15	456	8.45	1.26	448
Per Capita Real Operating Expenses (Fixed-route bus system)	0	0	456	0	0	448
Unemployment rate (%)	6.41	2.53	456	6.72	2.67	448
Manufacturing share of total employment (%)	19.38	7.87	453	20.38	8.94	438
Average manufacturing earnings (Real \$)	27,213	6,673	452	27,058	6,256	438
Retail share of total employment (%)	12.86	3.18	452	12.55	2.94	438
Average retail earnings (Real \$)	10,840	1,389	452	11,554	5,089	438
Recession Dummy	0.25	0.43	452	0.26	0.44	438
<b>with fixed route bus systems</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Obs</b>
Average Turnover Rate	8.84	1.22	483	8.84	1.22	483
Per Capita Real Operating Expenses (Fixed-route bus system)	11.02	9.30	483	11.02	9.30	483
Unemployment rate (%)	6.00	2.59	483	6.00	2.59	483
Manufacturing share of total employment (%)	15.90	7.20	483	15.90	7.20	483
Average manufacturing earnings (Real \$)	30,782	5,840	483	30,782	5,840	483
Retail share of total employment (%)	13.13	3.02	483	13.13	3.02	483
Average retail earnings (Real \$)	11,537	1,022	483	11,537	1,022	483
Recession Dummy	0.25	0.43	483	0.25	0.43	483

**Table 3: Results, Midwest small cities sample (AB sample)**

Variable	Model 1 Coefficient [p-value]	Model 2 Coefficient [p-value]	Model 3 Coefficient [p-value]	Model 4 Coefficient [p-value]	Model 5 Coefficient [p-value]
Constant	9.6879*** [0.0000]	10.1858*** [0.0000]	12.7276*** [0.0000]	13.0147*** [0.0000]	12.6259*** [0.0000]
Per Capita Real Operating Expenditures (Fixed-route bus system)	-0.0413*** [0.0082]	-0.0519*** [0.0007]	-0.0403*** [0.0055]	-0.0296** [0.0299]	-0.0293** [0.0345]
Unemployment rate	..	-0.1623*** [0.0000]	-0.1928*** [0.0000]	-0.2021*** [0.0000]	-0.2092*** [0.0000]
Manufacturing share of total employment	..	..	-0.0934*** [0.0002]	-0.1096*** [0.0000]	-0.1117*** [0.0000]
Average manufacturing earnings (Real)	..	..	-1.79E-05* [0.0779]	-8.30E-06 [0.4281]	-6.29E-06 [0.5478]
Retail share of total employment	..	..	..	0.0643*** [0.0036]	0.0774*** [0.0013]
Average retail earnings (Real)	..	..	..	-0.0001* [0.0540]	-8.82E-05 [0.1263]
Recession Dummy				..	0.1189 [0.1043]
Time Trend	-0.1219*** [0.0000]	-0.0347** [0.0140]	-0.0751*** [0.0000]	-0.0618*** [0.0014]	-0.0584*** [0.0030]
AR(1)	0.2638*** [0.0000]	0.2778*** [0.0001]	0.2340*** [0.0009]	0.2301*** [0.0020]	0.2259*** [0.0032]
Obs.	861	861	857	855	855
Adj. R-sq.	0.608	0.6497	0.6599	0.6734	0.675
F-stat	17.70***	20.70***	21.01***	21.72***	21.62***
Durbin-Watson	2.044	2.056	2.046	2.093	2.084

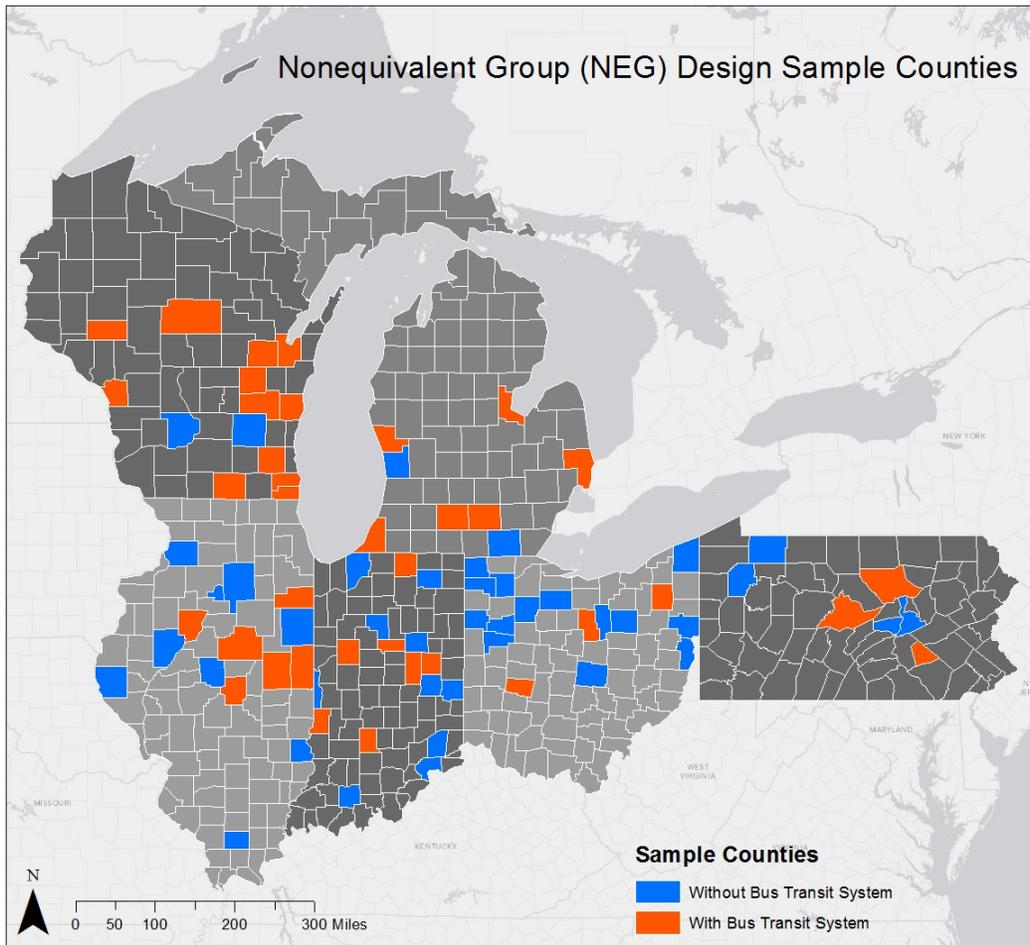
\*\*\* 0.01 level of significance, \*\*0.05 level of significance, \*0.1 level of significance

**Table 4: Results, Midwest small cities sample (propensity score sample)**

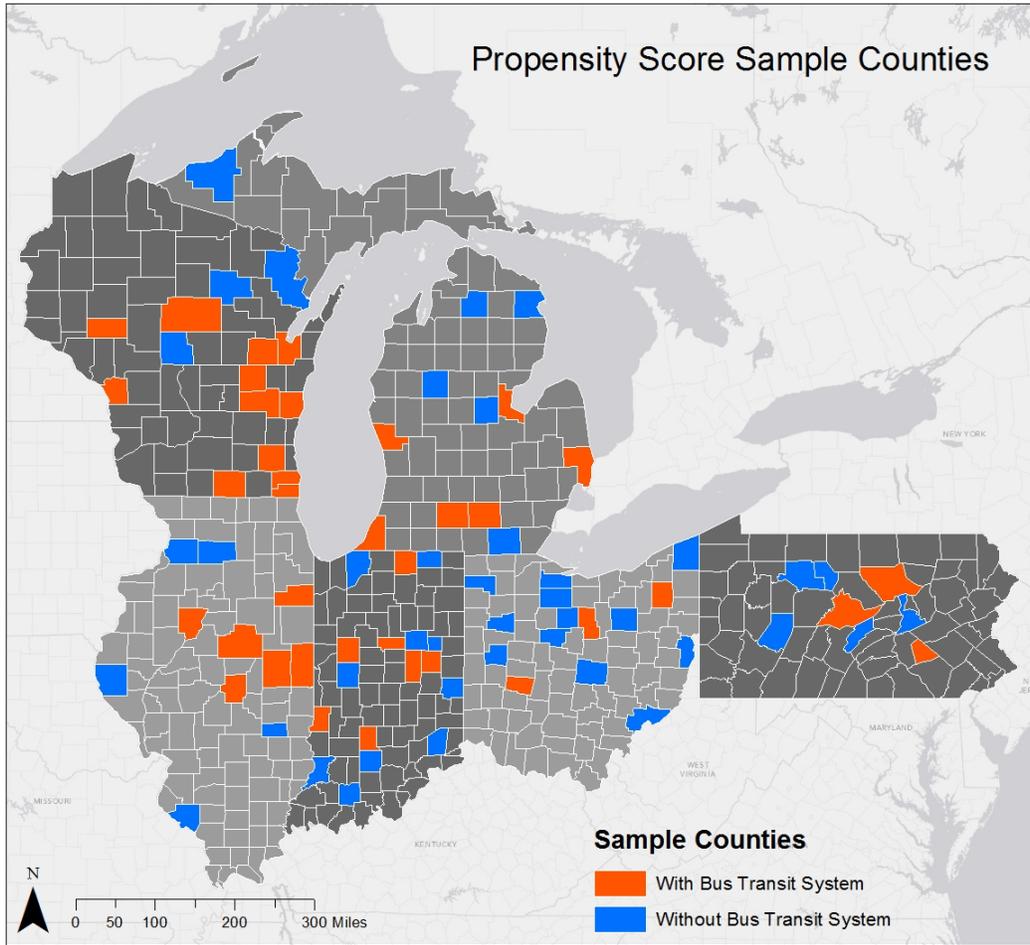
Variable	Model 1 Coefficient [p-value]	Model 2 Coefficient [p-value]	Model 3 Coefficient [p-value]	Model 4 Coefficient [p-value]	Model 5 Coefficient [p-value]
Constant	9.6210*** [0.000]	10.1507 [0.000]	13.0603*** [0.000]	11.3374*** [0.000]	10.9243*** [0.000]
Per Capita Real Operating Expenditures (Fixed-route bus system)	-0.0427*** [0.006]	-0.0538*** [0.0004]	-0.0421*** [0.0037]	-0.0335** [0.0156]	-0.0331** [0.0190]
Unemployment rate	..	-0.1666 [0.000]	-0.2062*** [0.000]	-0.2150*** [0.000]	-0.2235*** [0.000]
Manufacturing share of total employment	..	..	-0.0889*** [0.0002]	-0.0967*** [0.0001]	-0.0976*** [0.0001]
Average manufacturing earnings (Real)	..	..	-3.12E-05** [0.0103]	-2.80E-05** [0.0197]	-2.16E-05* [0.0709]
Retail share of total employment	..	..	..	0.0807*** [0.000]	0.0950*** [0.000]
Average retail earnings (Real)	..	..	..	5.19E-05*** [0.0002]	5.65E-05*** [0.000]
Recession Dummy	..	..	..	..	0.1490** [0.0339]
Time Trend	-0.1196*** [0.000]	-0.0297 [0.0367]	-0.0637*** [0.0002]	-0.0398** [0.0225]	-0.0359** [0.0417]
AR(1)	0.2635*** [0.000]	0.276309 [0.000]	0.2341*** [0.0005]	0.2235*** [0.0011]	0.2221*** [0.0016]
Obs.	853	853	839	839	839
Adj. R-sq.	0.621	0.664	0.672	0.682	0.684
F-stat	18.48***	21.81***	21.74***	22.19***	22.18***
Durbin-Watson	2.069	2.094	2.089	2.115	2.109

\*\*\* 0.01 level of significance, \*\*0.05 level of significance, \*0.1 level of significance

**Fig**



**Fig**



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## Appendix

Table A1. State and years included in panel.

State	First year of data included in dataset
Illinois	1998
Indiana	1999
Michigan	2001
Ohio	2000
Pennsylvania	1998
Wisconsin	1998

Table 3. Counties with bus systems

FIPS	County	State
17019	Champaign	IL
17091	Kankakee	IL
17113	McLean	IL
17115	Macon	IL
17143	Peoria	IL
17183	Vermilion	IL
18035	Delaware	IN
18039	Elkhart	IN
18095	Madison	IN
18105	Monroe	IN
18157	Tippecanoe	IN
18167	Vigo	IN
26017	Bay	MI
26021	Berrien	MI
26025	Calhoun	MI
26075	Jackson	MI
26121	Muskegon	MI
26147	St. Clair	MI
39003	Allen	OH
39023	Clark	OH
39081	Jefferson	OH
39089	Licking	OH
39133	Portage	OH
39139	Richland	OH
42027	Centre	PA
42075	Lebanon	PA
42081	Lycoming	PA

55009	Brown	WI
55035	Eau Claire	WI
55039	Fond du Lac	WI
55059	Kenosha	WI
55063	La Crosse	WI
55073	Marathon	WI
55087	Outagamie	WI
55101	Racine	WI
55105	Rock	WI
55117	Sheboygan	WI
55133	Waukesha	WI
55139	Winnebago	WI