Proximity, Population, Wealth, and Agenda Control in Stadium Funding: The 1997 Qwest Field Referendum Outcome

Brady Horn
Department of Economics
University of New Mexico

and

Rodney Fort
Sport Management
University of Michigan

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Corresponding Author:

Rodney Fort
Sport Management
University of Michigan
1402 Washington Heights, Rm. 3150
Ann Arbor, MI 48109-2808
735-647-8989
rodfort@umich.edu

Abstract:

Direct inspection of data on the Qwest Field referendum in the state of Washington, plus a county-level representative voter model of yes votes, support the following conclusion. The closest counties to the stadium, also the most highly populated and richest counties in the state, ruled this election while the costs were state-wide. In addition, there is some evidence that voters believed there was a relocation threat if the referendum failed. The odds of voting yes were higher in counties with more college-educated voters but, paradoxically, also in counties with higher unemployment.

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Dear fellow Washingtonians:
I've said from the start I wouldn't go forward with purchasing the Seahawks and building a new stadium and exhibition center without your approval. Knowing a "Yes" vote will be an act of trust, I'd like to share my commitments to this public/private partnership… Should we move forward, the new stadium and exhibition center will be a valuable asset – bringing our communities together and benefiting the state for decades to come.

—Paul Allen (Secretary of the State of Washington, 1997, p. 4).

I. Introduction

Referendum voting outcomes have proven informative about economic behavior in many areas of government spending. Primarily, analysis has been in education, health care, and nuclear power. Here, we examine another large-scale public endeavor, provision of a stadium for a pro sports team owner. In particular, through inspection of the geographic distribution of yes votes, related population and income data, and estimation of a county-level representative voter model, we examine a referendum vote in the state of Washington to subsidize the building of what is now known as Qwest Field in Seattle. It is difficult to escape the conclusion that the closest counties to the stadium, also the most highly populated and richest counties, ruled this election even though the costs were borne state-wide.

Direct inspection of the geographic distribution of yes votes in the state suggests that support increased systematically with proximity to the stadium. Indeed, the highest level of yes votes occurred in the counties immediately proximate to the stadium. It also ends up that these counties are the most densely populated and richest counties in the state.

Results of estimating a county-level, "representative voter" model are entirely consistent with the inspection results—proximity and population really do rule. Adding to only one, less formal, finding in the literature on sports facility referendum voting, there is some evidence that voters believed the relocation threat posed by failure of the referendum. Further, as found in previous works on city-level measures, the odds of a yes vote were higher in counties with more college-educated voters. But there was also a paradoxical result—the odds of a yes vote increased in counties with higher unemployment.

The paper proceeds as follows. In the next Section II, we give the background on the election. Section III contains our inspection of the geographic distribution of yes votes across the state and its relationship to population and income. The county-level, representative voter model is in Section IV, along with a data description and a summary of the results. Conclusions round out the paper in Section V.

II. Background

Referendum 48 was decided in a state-wide special election on June 17, 1997. The specific details of the stadium funding can be found in the 28 page *Official Washington Voter's Pamphlet* (Secretary of the State of Washington, 1997). Overall, the ballot stated that the stadium would cost approximately $425 million with a 76-24 public-private split ($323 million public money). The referendum passed by a slight 51.1 percent of the popular vote—820,364 yes; 783,584 no (Secretary of the State of Washington, 2009).

Some revenue elements to cover the public portion were added diversions from private spending. $95 million would be covered by a ticket tax, a parking tax, and a King County (Seattle) room tax extension. The remaining elements in the public portion,

although touted otherwise, were direct diversions of funds spent elsewhere across the state on public services. The most obvious of these was sales tax forgiveness amounting to $101 million. Less obvious was $127 million from a new lottery game. To the extent that new lottery games simply redistribute a given propensity in the population to gamble, this new game would divert funds from their previously allocated purpose. In 1997, lottery funds were dedicated to education construction projects for K-12 and higher education, economic development, problem gambling prevention and treatment, and the state's General Fund. Thus, there are impacts not just on private spending through new revenue devices, but also on the previous distribution of public spending.

The final element in the public portion is especially interesting. $27 million came in tax breaks to the builders of the stadium. Economically, it is difficult to determine the true cost of this $27 million "contribution." If the next best opportunity for these builders was a purely private endeavor, was $\frac{\$27\text{million}}{\$425\text{million}} \cong 6.4$ percent the "going rate" tax break on privately financed development? If the next best opportunity for these builders was a purely public endeavor, then this $27 million appears to be a phantom contribution; the public never would have born this cost in the first place since, presumably, the same tax break would have applied. If the latter was the case, then the true cost of the stadium was actually $398 million and the public-private split was 74-26 ($296 million public).

Proponents did all they could to portray Referendum 48 as essential to keeping the Seahawks in Seattle, building on threats and actions by the previous owner, Ken Behring, to move the team to California (this and following details are in Fort, 1999). Los Angeles was without an NFL team and various owner interests in the L.A. area were actively pursuing NFL teams. Behring tried to move the Seahawks to Hollywood Park just prior

to the referendum episode. He was turned back by the NFL under a league-enforced cooling off period.

During the cooling off period, Paul Allen paid $10 million for an option to buy the Seahawks and made it clear he would only exercise this option if a new, publicly funded, stadium would be built. If the option expired, the team would still belong to Behring whose past behavior predicted that the team would move. Thus, Allen's option purchase left the underlying threat that voters would lose their team if they did not come through with the stadium subsidy by passing Referendum 48.

III. The Geographic Distribution of Yes Votes, Population, and Income

Figure 1 (reference) shows the geographic distribution of yes votes on Referendum 48 by color-coding the yes-vote percentage by county. We note that the Cascade Mountains split the state into what residents refer to as the West-Side and the East-Side. Figure 1 makes clear that the West-side carried the vote; proximity to the eventual site of Qwest Field in Seattle, King County, coincides with the strength of the vote in favor of Referendum 48. With the exception of Benton County, all are symmetrically distributed around Seattle, taking into account the presence of Puget Sound.

Adding the population and income data in Table 1, it is safe to characterize the counties that passed Referendum 48, separately portrayed in Table 2, as follows. They are 1) in the Northwest corner of the state, proximate to the eventual location of Qwest Field in Seattle, 2) the most heavily populated counties in the state, and 3) at the top of the state income distribution. There are nearly no exceptions to this characterization. Among counties that passed the referendum, Benton County is not in the Northwest

corner, but it ranks 10th in population and 5th in county income and Grays Harbor County stands out only for its low income ranking.

Among counties that did *not* pass the referendum, San Juan County appears to be in close proximity but actually is quite isolated as a group of very small islands reachable only by air or ferry (Island County is aptly named but in contrast to San Juan County has a bridge to Snohomish County). Clark, Spokane, and Yakima Counties are top 10 population areas but all are quite distant. In addition, Spokane and Yakima Counties are far down the income distribution. Clark and San Juan Counties have high income but Clark is quite distant from Seattle and, as just mentioned, San Juan is quite isolated.

For whatever reason, Benton County voters followed the West-side vote. It may be that Benton's large population (10th, primarily in the "Tri-Cities" of Kennewick, Pasco, and Richland) and income (5th) cause it to support the referendum despite its marginally manageable distance from Seattle. For example, Spokane County also is highly populated but quite far from King County and voted heavily against the referendum.

To make the story complete, and quite symmetrical, the counties with the lowest proportion of yes votes are in the farthest corners of the state away from King County. Not surprisingly, these regions also happen to have low population compared to the rest of the state (except for aforementioned Spokane County). The distribution of yes votes suggests that the more populated, more affluent, West-side took full political advantage over the rest of the state. Nine counties symmetrically around the proposed location of the stadium, plus Benton County, had their way over the remaining 29 counties in the state since the costs were borne state-wide.

IV. "Representative Voter" Analysis

The calculus of the individual referendum voting decision was originally explored in any detail by Borcherding and Deacon (1972) and Deacon and Shapiro (1975). As the point out, the main problem is that individual voting is not observed. Lacking individual voting data, it is typical to appeal to a pivotal voter like the "median voter" (Downs, 1957). Under this choice, the individual calculus informs empirical analysis, but one only need analyze one representative individual, namely, the voter holding the median expenditure preference.

But then two other issues arise. What statistics represent the median voter? For example, does the pivotal median preference follow from being at the median in income? In addition, what is the appropriate level of aggregation for the statistical characterization of the pivotal voter (a comprehensive review is in Hoxby, 2000)? Finally, there may be situations where actual spending outcomes are not the median voter's most preferred outcome. This is the well-known Romer and Rosenthal (1978) "reversion threat" under agenda control. Filimon, Romer and Rosenthal (1982), Fort (1988), and Fort (1997), list the many works that followed that original work (including more by Romer and Rosenthal). Chang and Turnbull (2002) summarize the numerous works where agenda control has mattered in empirical analyses of voting.

The literature on referendum voting in the sports context is not quite so extensive. Agostini, Quigley, and Smolensky (1997) estimated a voting model at the precinct level for a ballpark in the San Francisco area finding that socio-demographic data shape voting preferences. Fort (1997) studied stadium funding referenda for their general outcome characteristics and the importance of agenda control but does no formal estimation of

voting outcomes. Brown and Paul (1999) argue in support of the classic concentrated benefits/dispersed costs public choice outcome for a city referendum in Cincinnati. Fort (1999) categorizes referenda in terms of their impact on spending levels compared to spending levels determined by direct democracy. Depken (2000) estimates fan loyalty and shows that it helps determine voting outcomes on nine city stadium elections. Coates and Humphries (2006) analyze city-level NFL stadium votes in Houston and Green Bay finding what they refer to as "proximity value;" being close to the facility increases yes votes. Dehring, Depken, and Ward (2008) analyzed the new NFL Cowboy stadium in Arlington, Texas, finding that homeowners vote in favor of increased property values. But none of these works explicitly accounts for agenda control and our work adds to the literature by examining a state-level election.

Following from the analysis of the county-level distribution of yes votes in the last section, we are curious about the determinants of these county-level results. We humor this curiosity by adopting a county-level aggregation. But we also try to account for the fact that there may be agenda control since the election was quite close (51.1% in favor) and closeness of the actual election outcome is indicative of agenda control (Fort, 1988; Fort, 1997). To capture the flavor of the story in Figure 1 more precisely, we employ the following county-level voting model:

$$(1)\quad \log\left(\frac{Y_i+\frac{1}{2}}{N_i+\frac{1}{2}}\right)=\alpha+\beta X_i+\varepsilon_i,\ i=1,\ldots,39 \text{ counties},$$

where Y_i = yes votes in county j, N_i = no votes in county i, X_i is the vector of explanatory variables for county i, α and β are parameters to be estimated, and ε is the

error term. This "traditional" estimation technique is discussed fully in Pindyck and Rubinfeld (1997) and we use the precision improvement of adding ½ in both the numerator and denominator as suggested by Cox (1970). The traditional technique estimates the model in expression (1) by ordinary least squares corrected for heteroskedasticity (for example, using "White's Correction").

In addition to the traditional technique, Theil's "group logit" approach is recently touted for estimating vote shares for representative voter models in the political science literature (Mikhailov, Niemi, and Weimer, 2002). Each county differs in the level of votes cast and, thus, the variance of the vote in each county is different. To increase efficiency, a *group* logit model gives greater weight to the outcomes with smaller variances. For our problem, let n_i = population in county i and at issue is the improvement using a weight proportional to n_i. Under the group logit, feasible generalized least squares is used to estimate:

$$(2)\quad \log\left(\frac{p_i}{1-p_i}\right) = \alpha' + \beta' X_i + \varepsilon'_i,\ i = 1,\ldots,n \text{ counties, where } p_i = \frac{Y_i}{n_i}.$$

Turning to specification of independent variables, we follow the general line suggested in the voting literature: people vote in their own self-interest, subject to the price they will pay for the outcome. Our primary measure of net benefit is proximity (data descriptions and descriptive statistics are in Table 3): we expect the net benefits of a new stadium to be higher for residents of counties closer to the stadium, measured by the DISTance from a given county seat to Seattle.

The rest of the economic calculus involves price, income, and population. Price is problematic because of the multi-source revenue specification in the referendum (a

variety of taxes, lottery and sales tax diversion, and tax forgiveness). So, we take the approach popular in the voting literature and identify groups whose welfare would be expected to change in predictable ways. Relevant to sales tax forgiveness, individuals dependent on existing unemployment programs, and other related state support programs, would not want to subsidize a professional football stadium, measured by UNEMPloyed per capita. We hypothesize that the elderly, measured by RETIRED people per capita, should be opposed to paying for long-term capital projects since they are more likely to enjoy only a relatively shorter period of benefits. In addition, and especially for lottery diversions, families with children in school should feel schools threatened by fund diversion, measured by CHILDREN in school per capita.

For the remaining two variables, income is problematic. Despite the old econometric safe that "everything is correlated in one way or another," we find multicollinearity especially troublesome for income as shown in Table 4. An acceptable approach to this type of problem is to omit a variable and we do so (lamentably) for any explicit income measure in favor of the added explanation possible from the broader array of other independent variables. POPulation is a control variable and we allow for non-linear impacts with its squared value.

As stated in the introduction, it was possible that the election was subject to agenda control; vote yes or the team will leave. This threat was more than speculation since voters had just witnessed the near-move of the team to California by owner Ken Behring and it was reinforced in the purchase option choice by Paul Allen. We reiterate that the closeness of the election, 51.1 percent in favor, is indicative evidence of agenda control.

Of course, voters are free to assess the chance that this will really occur. To incorporate this possibility, we devise a proxy that measures the highest-level of football voters will be able to enjoy if the election failed. Voters can reach one of two Division 1A football alternatives, located nearly completely at the diagonal extreme across the state from each other—the University of Washington Huskies in Seattle (King County) and the Washington State University Cougars in Pullman (Whitman County). Since the proposed NFL stadium and the University of Washington alternative are both in Seattle, we constructed the following variable. If the distance from a given county seat to the King County seat was smaller than the distance to the Whitman County seat, then CLOSEST = 0; else CLOSEST = distance between the county seat and the Whitman County seat (just a few miles from Pullman). If the coefficient estimate on this variable ends up positive, then the odds of a yes vote are larger the farther away is the college alternative. This would be consistent with voters taking to the booth the belief that the pro alternative would be lost in the event the election failed. If the coefficient estimate is zero, voters discounted that possibility.

Two other controls seem reasonable. Past work at the precinct-level on city measures found that education increased the probability of yes votes. Thus, BS (bachelor degrees per 1000 population) is employed as an independent variable for high demanders. We also hypothesize that general political leanings should effect any predisposition toward spending, measured by the ratio of the number of votes cast for the DEMOcratic candidate Clinton to the number of votes cast for Republican candidate Dole in the 1996 general Presidential election.

Our empirical results are in Table 5 for the traditional approach (expression (1)) and the group logit approach (expression (2)). Precisely the same specification of independent variables, and precisely the same data, makes R^2 a useful tool for comparing estimation techniques. Goodness-of-fit improves with the Theil group logit compared to the traditional approach (adjusted R^2 increases by 0.273, about 59%). In addition, more variables are significant and enter with hypothesized signs. For these data, the group logit approach to voting outcomes offers precisely the distinct improvement in estimation argued by Mikhailov, Niemi, and Weimer (2002). The rest of our discussion proceeds relative to the group logit results in Table 5.

Most estimated coefficients are of expected sign. Odds of voting yes fall with DIST so we also find support for proximity value for voters. But rather than within a city, the proximity value in our results is highest for counties close to the stadium site, diminishing with distance across the state. For our attempts to capture price effects, we find only that the odds of voting yes *increase* with UNEMP, counter to our expectations, and none of the other "price" variables matter. This is an unexpected outcome. Perhaps this is just multicollinearity since the simple correlation coefficient between UNEMP and BS is –0.68 (Table 4) and BS is statistically significant. Or perhaps the cost of voting for unemployed people is simply very low and they are bigger fans than employed people! The odds of a yes-vote increase at a decreasing rate with POP. All-in-all, these particular results are just what one would expect from our inspection of the distribution of yes votes, population, and income in the last section.

To go along with the possibility of agenda control indicated by the closeness of the election outcome, we find evidence that voters incorporated the loss of the team into their

voting rather than discounting this threat. However, the evidence is not overwhelming; the coefficient on CLOSEST is positive but only marginally significant (90 percent level of confidence). That our education control BS is significant, increasing the odds of voting yes, is consistent with other research on voting at the precinct-level on city measures.

We have no explanation for the statistical insignificance of RETIRED, CHILDREN, and DEMO beyond the obvious—either our variables are not capturing what we intended, or this type of logic useful in past voting studies does not hold for this particular special election (perhaps sports really are different, after all).

V. Conclusions.

On June 17, 1997 voters in the state of Washington passed Referendum 48 with 51.1 percent of the popular vote. Qwest Field was eventually constructed and professional football remained in the state of Washington. Eventual owner Paul Allen purchased a time sensitive option to buy the Seahawks, spent millions on advertising, and covered the cost of the special election. The election was clearly characterized by the threat that the team would be lost in the event of referendum failure by then-owner Ken Behring and by owner-in-waiting Paul Allen.

Direct inspection of the geographic distribution of yes votes indicates that proximity carried the election (with one county as an exception to this rule). Adding basic income and population data to this mix then suggests that more highly populated, richer counties, all proximate to the eventual stadium location in Seattle, ruled the election outcome.

In a county-level representative voter model, we discover a number of interesting things. First, the results of direct inspection are supported. As with proximity value findings by others analyzing city-level precinct level data, the odds of voting yes decrease with distance from the proposed facility. Second, odds of voting yes increase at a decreasing rate with population. Third, we find (weak) evidence that voters believed the threat that they would lose their team if the election failed—the election barely passed and the odds of voting yes increased the farther voters were from the next best, high-level, college football alternative. In addition, although we tried more than one variable to capture price and income impacts, only unemployment mattered and, paradoxically, increased the odds of a yes vote. As in other studies, education increased the odds of voting yes. Variables intended to capture voting by the elderly and parents of school-age children, as well as relative Democratic voting sentiments, all were insignificant.

Thus, the evidence is quite strong that ten of the thirty nine counties in the state passed the referendum. Nine of these ten counties were located symmetrically around the proposed location of the stadium. They all are richer and more densely populated than the rest of the counties in the state. This suggests that the more populated, more affluent, West-side of the state took full advantage of its political power over the rest of the state in building itself a new football stadium even though the costs were borne state-wide.

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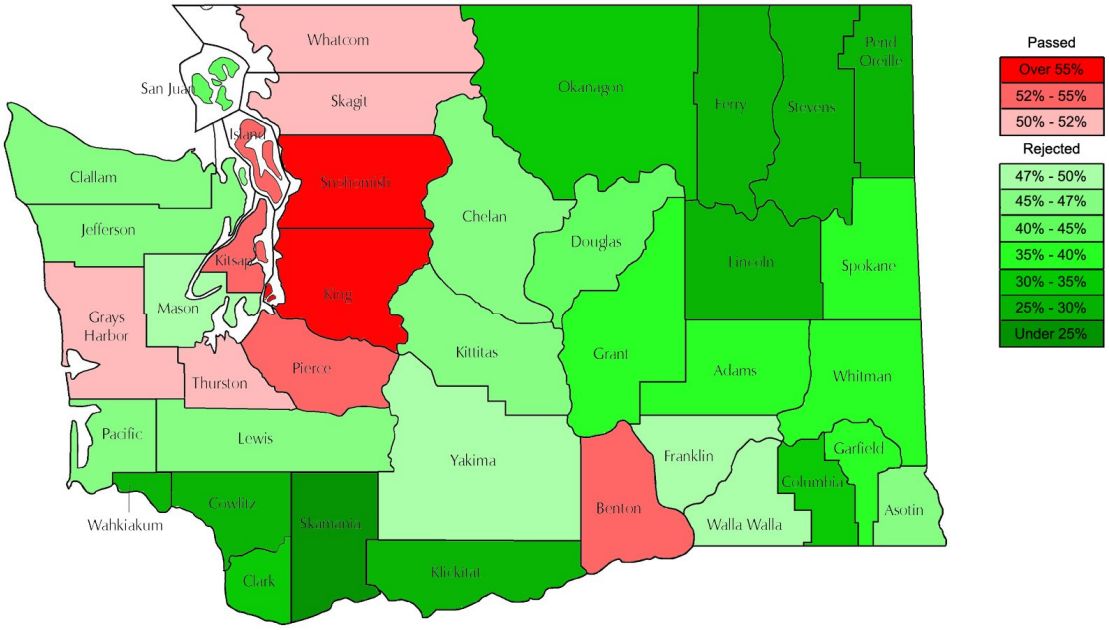
Figure 1. Referendum Bill 48: Geographic Voting Outcomes.



Source: Voting data are from the Secretary of the State of Washington (2007). Artwork by the authors.

Table 1. County Population and Median Household Income, Washington State, 1997.

	Population	Rank	Income	Rank		Population	Rank	Income	Rank
State	5,663,763		42,399						
Adams	15,989	31	31,795	30	Lewis	67,350	16	33,610	26
Asotin	20,273	29	31,499	31	Lincoln	9,883	34	35,838	17
Benton*	136,503	10	44,057	5	Mason	47,277	20	36,524	16
Chelan	65,936	17	35,662	19	Okanogan	40,277	23	28,047	39
Clallam	62,889	18	34,770	22	Pacific	20,813	28	28,974	37
Clark	317,324	5	45,705	3	Pend Oreille	11,816	33	31,223	33
Columbia	4,527	37	30,820	34	Pierce*	668,103	2	42,596	7
Cowlitz	90,728	12	36,738	14	San Juan	12,906	32	41,134	9
Douglas	31,252	26	36,855	13	Skagit*	97,848	11	38,449	10
Ferry	7,127	36	30,489	35	Skamania	9,559	35	37,409	12
Franklin	47,206	21	35,770	18	Snohomish*	557,016	3	50,680	1
Garfield	2,252	39	34,792	21	Spokane	409,553	4	34,920	20
Grays Harbor*	68,188	15	31,368	32	Stevens	37,609	24	32,435	29
Grant	70,433	13	33,977	25	Thurston*	199,081	8	43,748	6
Island*	68,967	14	41,901	8	Wahkiakum	3,883	38	36,566	15
Jefferson	25,116	27	34,282	23	Walla Walla	55,238	19	34,094	24
King*	1,679,516	1	48,271	2	Whatcom*	157,460	9	37,553	11
Kitsap*	228,181	6	44,098	4	Whitman	40,815	22	28,697	38
Kittitas	32,325	25	29,775	36	Yakima	223,917	7	32,946	28
Klickitat	18,627	30	33,543	27					

Source: State of Washington (2008a, 2008b).

Note: * denotes that Referendum 48 passed in the county.

Table 2. Population and Income, Counties that Passed Referendum 48, 1997.

	Population	Rank	Income	Rank
Benton	136,503	10	44,057	5
Grays Harbor	68,188	15	31,368	32
Island	68,967	14	41,901	8
King	1,679,516	1	48,271	2
Kitsap	228,181	6	44,098	4
Pierce	668,103	2	42,596	7
Skagit	97,848	11	38,449	10
Snohomish	557,016	3	50,680	1
Thurston	199,081	8	43,748	6
Whatcom	157,460	9	37,553	11

Source: See Table 1.

Table 3. Variables and Descriptive Statistics

Variable	Description	Min	Max	Mean	S.D.
YES	Number of yes votes	315	275,368	21,035	48,410
NO	Number of no votes	634	213,092	20,092	37,891
DIST	Driving distance to Seattle	0	350	164	95
UNEMP	Unemployment percent of labor force	2.2	13.7	7.2	2.7
RETIRED	Population 65 years and older per capita	0.084	0.224	0.140	0.038
CHILDREN	Public school enrollment per capita (1998-1999)	0.124	0.230	0.179	0.027
POP	Total population of county	2,397	1,737,034	151,131	305,164
CLOSEST	Smaller of driving distance to Seattle or Pullman	0	212	105	55
BS	Bachelor Degrees per 1000	10.4	42.6	17.1	7.0
DEMO	Votes cast for Clinton divided by Votes cast for Dole, 1996	0.689	1.96	1.12	0.344

Sources: Voting data are from the Secretary of the State of Washington (2007). Demographic data are from U.S. Census Bureau (2009).

Table 4. Correlation Matrix.

	DIST	UNEMP	RETIRED	CHILDREN	POP	CLOSEST	BS	DEMO	INCOME
DIST	1								
UNEMP	-0.342	1							
RETIRED	-0.041	0.309	1						
CHILDREN	-0.194	0.479	-0.096	1					
POP	-0.436	-0.362	-0.373	-0.175	1				
CLOSEST	0.403	0.662	-0.005	0.320	-0.448	1			
BS	-0.217	-0.681	-0.221	-0.554	0.393	-0.563	1		
DEMO	-0.502	-0.259	0.168	-0.433	0.354	-0.259	0.171	1	
INCOME	-0.614	-0.630	0.020	-0.480	0.557	-0.437	0.590	0.468	1

Table 5. Regression Results.

Variable	Traditional OLS	Group Logit
Constant	-0.343	0.022
	(1.005)	(0.850)
DIST	-0.003*	-0.004*
	(.001)	(0.001)
UMEMP	-0.016	0.076***
	(.040)	(0.039)
RETIRED	0.499	0.025
	(1.699)	(2.02)
CHILDREN	2.225	-3.54
	(3.298)	(3.50)
POP	7.06E-07	1.03E-06*
	(4.84E-07)	(3.80E-07)
POP^2	-3.89E-13	-6.38E-13*
	(2.65E-13)	(2.07E-13)
CLOSEST	0.001	0.002***
	(.001)	(0.001)
BS	0.016	0.031***
	(.014)	(0.013)
DEMO	-0.170	-0.233
	(.225)	(0.185)
#OBS	39	39
DF	29	29
R^2	0.584	0.798
$AdjR^2$	0.462	0.735

Notes: Standard errors are in parentheses. *Significant at 99% level. **Significant at 95% level. ***Significant at 90% level.