

## **EXPLAINING TRANSPORTATION FUNDING BALLOT MEASURE SUCCESS**

### **Tyce C. Herrman**

University of Oregon, Department of Planning Public Policy and Management

119 Hendricks Hall, Eugene, OR 97403

Tel: 815-326-0639; Email: [TyceHerrman@protonmail.com](mailto:TyceHerrman@protonmail.com)

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1 **ABSTRACT**

2 Transportation infrastructure is expensive, costs are increasing, and across the United States, federal  
3 spending on transportation is decreasing as a proportion of overall national spending. Local governments  
4 are under increasing pressure to generate revenue to meet project needs. In response, they have turned to  
5 ballot measures as one method to raise funds. It remains unclear which characteristics of transportation  
6 funding measures and the communities they are held in increase the likelihood of passage. Using  
7 regression modelling, this study analyzes what variables explain measure passage of local transportation  
8 funding measures on ballots in California, Oregon, and Washington from 1990-2015. Results indicate that  
9 sociodemographic features do not help explain passage of measures and that other unobserved factors  
10 may be driving measure passage.

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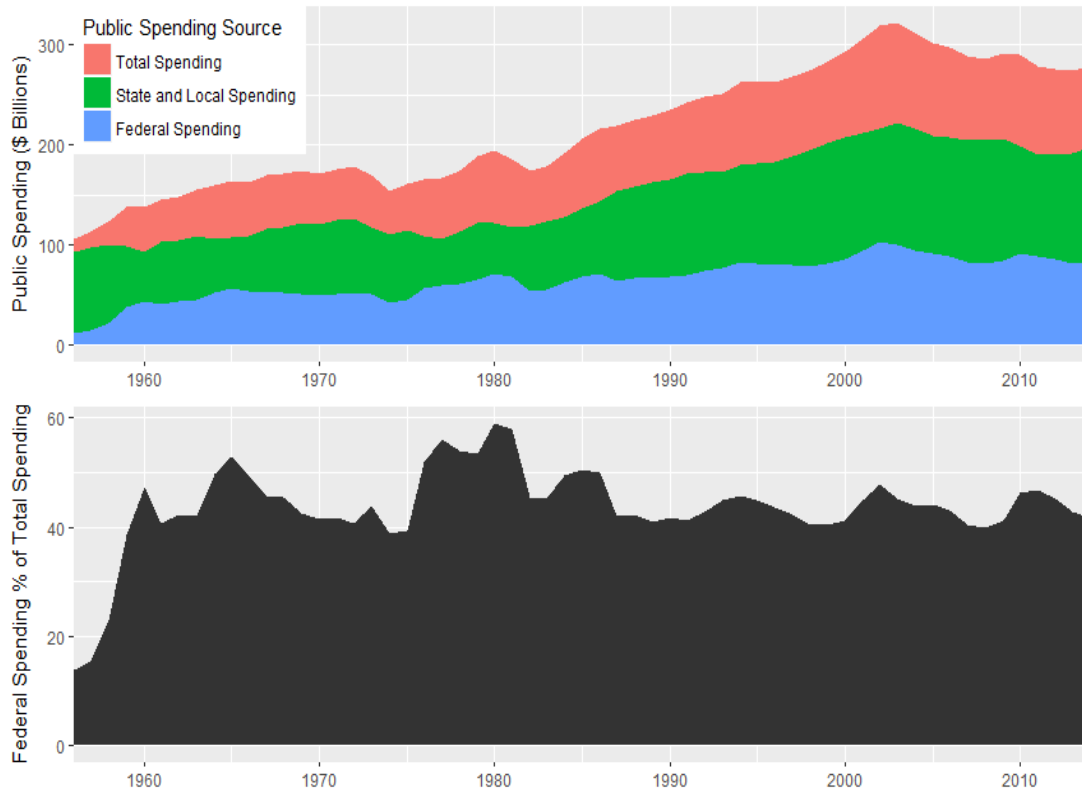
14 *Keywords:* ballot measure, measure, voting, funding

## 1 INTRODUCTION

### 3 **The Increasing Importance of Local Transportation Funding**

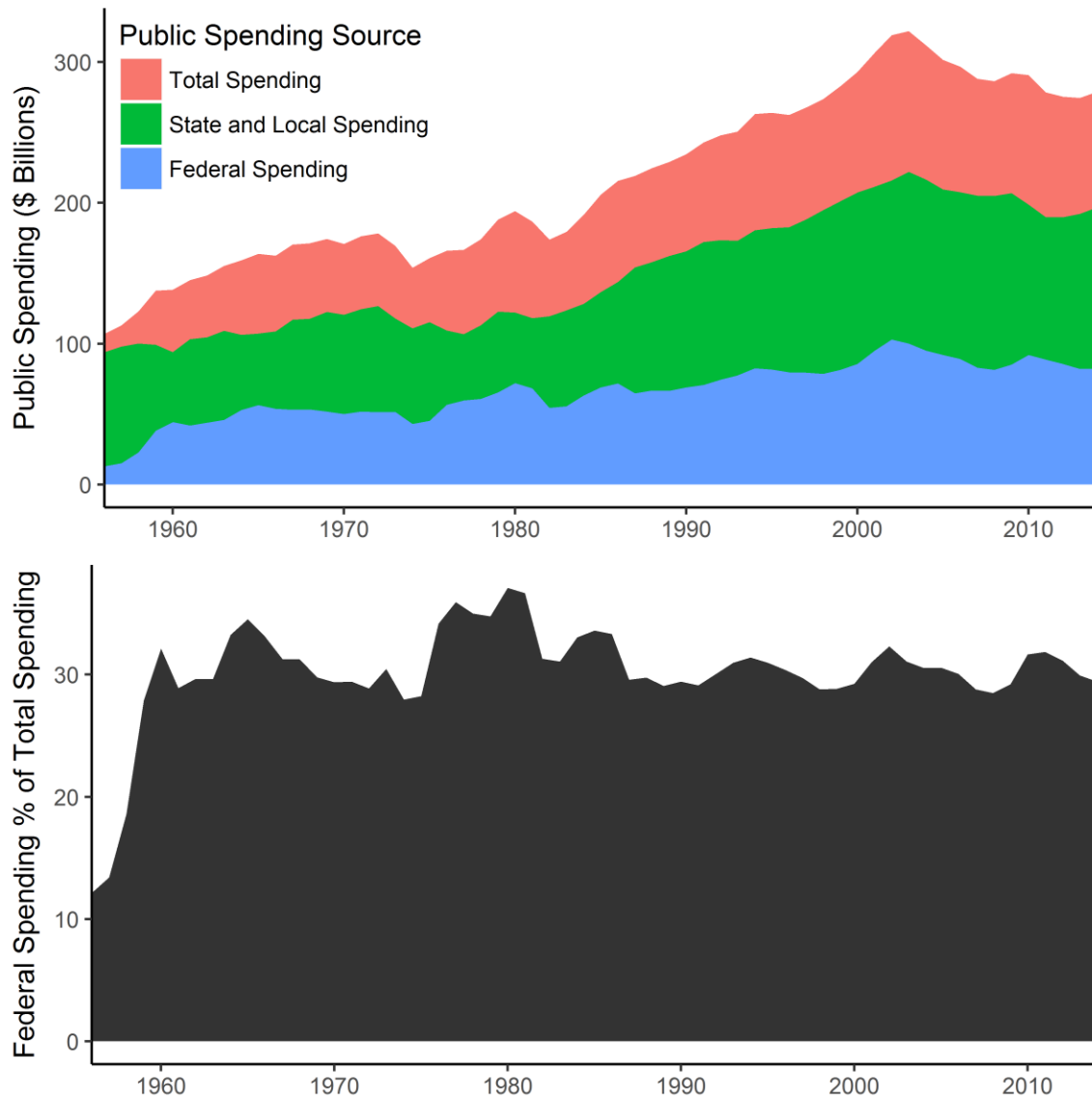
4 Transportation infrastructure requires vast expenditures, but across the United States federal  
5 funds are increasingly unavailable to meet this demand. This lack of federal funding is a  
6 relatively new phenomenon. In fact, prior to the advent of automobile-dominated personal  
7 transport in the 1920s, local communities primarily generated their own funds through property  
8 taxes and transit was funding by private entities looking to generate wealth. The federal  
9 government increased its role in transportation finance to accelerate the build-out of roads for  
10 automobiles and shifted revenue generation to user-based fees like the gasoline tax and vehicle  
11 registration fees (1). However, over the past several decades, the convergence of several trends  
12 have strained the capacity of these user-based taxes and fees to meet funding needs. First, the  
13 increasing and unplanned cost of maintaining the vast automobile-focused transportation system  
14 has resulted in inadequate long-term strategies for sustaining revenue-raising capabilities based  
15 solely on user-based fees (1–5). Second, attempts to raise user-based taxes and fees in Congress  
16 has been met with staunch public opposition and remain a political nonstarter. Finally, increasing  
17 fuel efficiency, stagnate and by some measures declining per-capita travel, and general monetary  
18 inflation has shrunk the real revenue-generating strength of fuel taxes and vehicle fees (6).

19 To compensate for funding shortfalls, the trend over the past several decades has been a  
20 shift of the burden of funding project improvements and repair back to states and especially  
21 municipal governments (1, 4). The Congressional Budget Office has tracked transportation  
22 expenditures by federal, state, and local governments since 1956. The percent of total  
23 transportation funding provided by the federal government has decreased steadily since its 1980  
24 high of 59 percent to present day 42 percent (Figures 1-3). Since 1980, the federal government  
25 has increased transportation spending by 14 percent, but state and local governments have  
26 increased spending by 61 percent. Exacerbating the shift in funding source is the ever growing  
27 funding gap as project need costs grow faster than revenue generation (7). Nationally, the U.S.  
28 Department of Transportation estimates there is a \$836 billion backlog of road and bridge capital  
29 investment needs (8). Additionally, there is a \$90 billion backlog of just maintenance of transit  
30 infrastructure and assets; at current spending levels, the backlog will grow to \$122 billion by  
31 2032 (8). The American Society of Civil Engineers estimates that from 2016 to 2025 the national  
32 transportation funding gap will grow to \$1.1 trillion (9). While the exact magnitude of the  
33 automobile-related funding gap is contested (i.e., what constitutes a “need” and strategies to  
34 solve them) (10), the pressure on local and state governments to meet more of transportation  
35 funding needs is not.



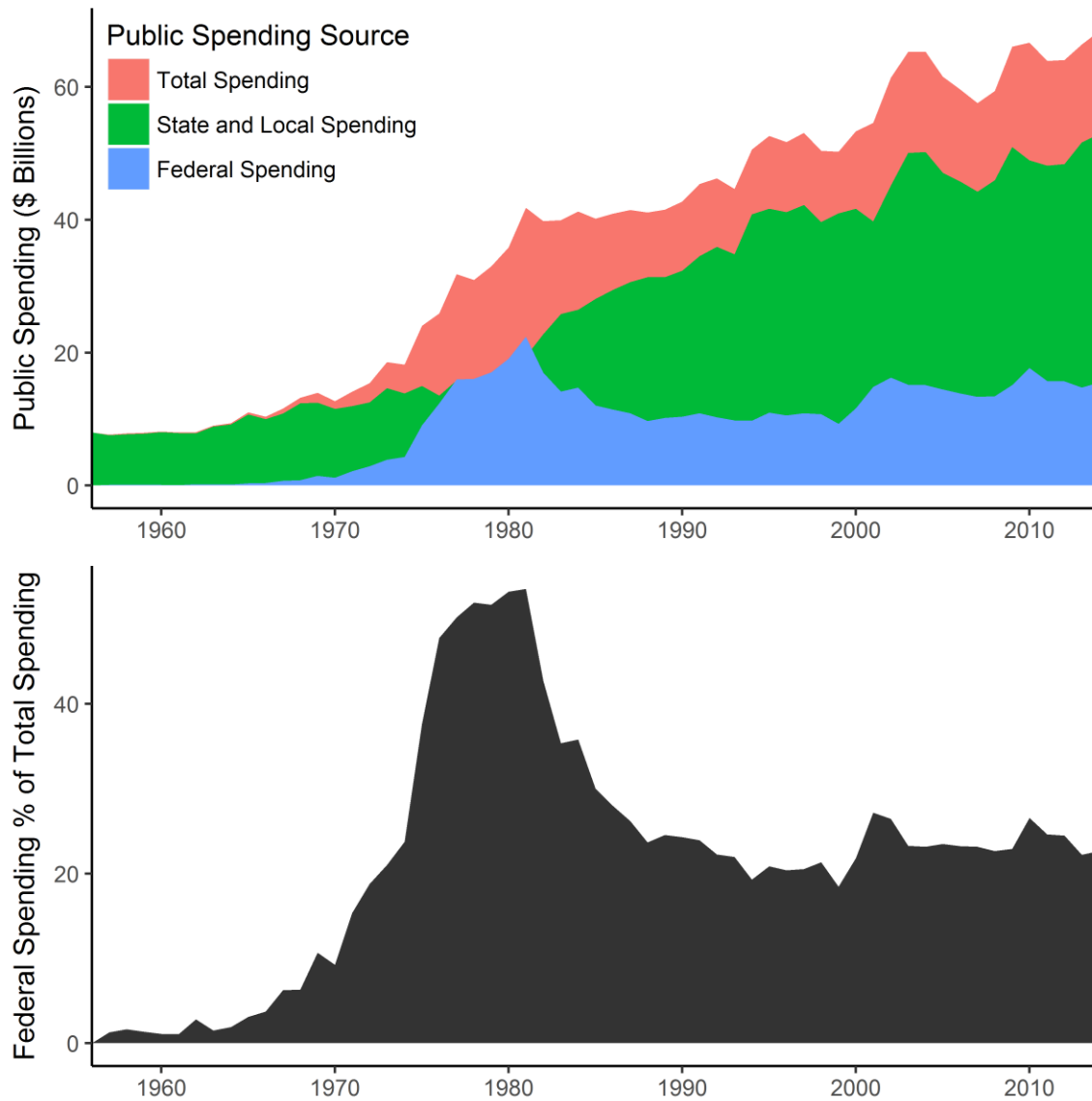
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**FIGURE 1 All transportation spending. Adapted from Congressional Budget Office “Public Spending on Transportation and Water Infrastructure, 1956 to 2014.”**



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**FIGURE 2 Highway spending. Adapted from Congressional Budget Office “Public Spending on Transportation and Water Infrastructure, 1956 to 2014.”**



1  
2  
3 **FIGURE 3 Transit spending. Adapted from Congressional Budget Office “Public Spending**  
4 **on Transportation and Water Infrastructure, 1956 to 2014.”**  
5

6 **State and Local Government Response**

7 State and local governments have two options in meeting revenue demand: raise more revenue or  
8 implement new financing tools. A number of financing options are gaining popularity in the  
9 transportation sector including public-private partnerships and debt financing (11, 12). These  
10 financing tools are often more popular with elected leaders than revenue-raising taxes and fees  
11 because voters do not feel their impacts directly (6). However, financing tools on their own are  
12 often not sufficient in meeting the revenue needs of local governments. Thus, understanding  
13 public support of revenue sources and financing efforts is important for governments seeking to  
14 fund their transportation projects.

15 Revenue is raised either from users of the transportation infrastructure by directly  
16 assessing taxes and fees to them or from the population at large, irrespective of how much they  
17 use the infrastructure. Table 1 summarizes the different forms of revenue generation.

1  
2 **TABLE 1 Revenue Generation**  
3

| Source of Transportation Revenue Generation | Definition   | Example                                   |
|---|--|---|
| User  | Assessed on transportation-related products          | Fuel tax, vehicle fee, parking fee, tolls |
| Non-User                                    | Assessed on unrelated or indirectly-related products | Sales tax, property tax, bond sales       |

4  
5 In Oregon and Washington, state and local governments are not obligated to refer any  
6 type of legislation to voters. California, however, has a number of requirements for voter-  
7 approval of revenue generation codified by constitutional amendments and statutory initiatives.  
8 Of note, Propositions 13 in 1978, 62 in 1986 and 218 in 1996 created a majority vote  
9 requirement for any increase in taxes and a two-thirds majority for “special” taxes that fund a  
10 general purpose (15).

11 In states where it is allowed, voter-approved ballot measures have emerged as a popular  
12 means for local jurisdictions to raise revenue. In 2006, the Center for Transportation Excellence  
13 found an increase in both the number and success rate of transportation-related ballot measures  
14 nationwide from 2000 to 2005 (13). This popularity is in part due to the reluctance of federal and  
15 state legislatures to raise user-based taxes and fees. The burden has shifted to local jurisdictions  
16 to raise funds. This has been accomplished primarily through nonuser taxes and fees placed on  
17 ballots. A report for the Surface Transportation Policy Project by Ernst et al. (2) found that from  
18 1995 to 1999, the largest increase in non-federal transportation revenue source came from non-  
19 user fees. Local non-user fee revenues increased by 27 percent and state non-user fee revenues  
20 increased by 46 percent. In contrast, federal gas tax revenues increased by 87 percent and state  
21 gas tax revenues increased by only 19 percent, and much of that increase was due to increased  
22 driving rather than an increase in the state gas tax (2).  
23

#### 24 **What are Ballot Measures and How Do Local Governments Use Them?**

25 Ballot measures (henceforth referred to as “measures”) are pieces of legislations that are voted  
26 on by citizens (14). Legislation can either be proposed by voters as initiatives or reviewed by  
27 voters as referenda. Table 2 summarizes the types of measures.  
28

29 **TABLE 2 Types of Measures**  
30

| Measure Type | Referral Method | Process  | States in Study |
|--------------|-----------------|--|-----------------|
| Initiative   | Direct          | Qualifying proposals go directly on ballot         | CA, OR, WA      |
|              | Indirect        | Qualifying proposals first go to state legislature | WA              |
| Referendum   | Popular         | Voters refer existing legislation back to voters   | CA, OR, WA      |
|              | Legislative     | State legislature refers to voters                 | CA, OR, WA      |

31  
32 NOTE: Source, National Conference for State Legislatures



1           In the three states in this study, all types of ballot measures can occur at the state or  
 2 municipal level. Each state has different requirements for ballot measure appearance and  
 3 qualification. Citizen-led direct or indirect initiatives and popular referenda make up a small  
 4 percentage of total ballot measures. In the dataset for this study, only one measure was citizen-  
 5 led: Seattle’s 2014 Citizen Proposition 1 initiative for monorail funding and development. The  
 6 other 110 measures were legislatively referred by governmental bodies and make up virtually all  
 7 of the ballot measures reviewed in this study.

8           Measures on a ballot consist of a title and a concise, impartial summary of the measure’s  
 9 main points. The official language to appear on the ballot is most often prepared by the state’s  
 10 attorney general (this is the case for all three states in this study). Figure 4 depicts an example of  
 11 a ballot measure.  
 12

*To preserve and maintain funding for essential city services, including fire and other emergency response services, pothole repair, street and storm drain maintenance, graffiti removal, on-duty police staffing, street lighting, park maintenance, emergency reserves maintenance and other general city services, shall an ordinance establishing a temporary transactions (sales) and use tax of one-half of one percent (½%) for a period of five years be adopted?*

13  
 14  
 15 **FIGURE 4 Example ballot measure text from 2008 general election – Measure GG, El**  
 16 **Monte, CA.**

17  
 18           Ballot measures are an increasingly important method used by municipal and state  
 19 governments for raising funds for transportation (1, 16). In the face of higher stakes resting on  
 20 successful passage of transportation ballot measures, this project provides policymakers and  
 21 citizens insights and recommendations to increase the likelihood of passage of transportation  
 22 funding ballot measures. Recommendations are based on analysis of a comprehensive database  
 23 of local, county, special district, and state transportation funding ballot measures. The two areas  
 24 of analysis are:

- 25
- 26       • Socio-demographic variables of the communities in which transportation measures are on  
 27 the ballot. These include population, population density, income, race, education, age, commute  
 28 to work time and percent of commuters driving alone
  - 29       • Characteristics of the measures themselves. These include type of revenue generation  
 30 (tax, bond, etc.), government level, and transportation mode for which revenue is being raised.

31  
 32           A salient example of the difficulty in explaining measure success comes from Eugene,  
 33 OR. In 2007, voters rejected measure that would increase the local gasoline tax. The 3 cent per  
 34 gallon increase would have generated an estimated \$2 million per year and would have been  
 35 used to address a backlog of street maintenance. The following year, voters approved a \$35.9  
 36 million 5-year bond. Bond revenue (\$6.5 million annually) was specified for primarily street  
 37 repair but also allotted \$350,000 to off-street bicycle and pedestrian paths. These two measures,  
 38 held in the same community, in subsequent years, and generating similar scales of revenue had  
 39 two different outcomes. Which of the characteristics of the measures, the different funding types,

1 the modes listed, the existing or new funding source, might help explain why two seemingly  
2 similar measures had different outcomes?  
3

#### 4 **LITERATURE REVIEW**

5 Literature for the present study draws from three main bodies of research: ballot measure  
6 analysis in general, open space and conservation (OSC) measures, and transportation measures.  
7 Studies that employ regression analysis of ballot measures outcomes are highlighted.  
8

#### 9 **Ballot Measure Analysis**

10 Ballot measures can be conceptualized as an expression of the public's willingness to pay for  
11 collective goods. To this end, research has largely followed two pathways: interviewing and  
12 surveying individuals for stated preferences and analysis of actual voting outcomes. The latter  
13 method better reflects individual revealed preferences, which sets a more robust methodological  
14 foundation of analysis, but is extremely difficult to extend to wider geographic areas.

15 Analysis of ballot measure outcomes has primarily been conducted using regression  
16 analysis to estimate the relationship between voting outcomes and a wide variety of independent  
17 variables further explored below. Deacon and Shapiro (17) pioneered regression-based analysis  
18 of the effects of funding mechanism type and socio-demographic characteristics on ballot  
19 measure outcome. Heckman (18) introduced the two-step method to control for appearance bias  
20 (i.e., are voters in communities that have transportation funding measures on their ballot the kind  
21 of voters that are more likely to pass ballot measures)? Many of the subsequent studies of ballot  
22 measure outcomes use some variation of Heckman two-step method.  
23

#### 24 **Open Space Measures**

25 To date, transportation ballot measure outcome analysis has been limited; few have attempted to  
26 analyze outcomes in a comprehensive manner and methodological development has not been a  
27 focus. Rather, much of the robust ballot measure outcome analysis has been on open space and  
28 conservation (OSC)-related ballot measures. This is likely due to two primary reasons. First,  
29 OSC ballot measure funding nationwide has totaled nearly \$76 billion from 1988 to present and  
30 are thus the subject of interest for researchers. Second, the Land Trust Alliance has maintained a  
31 national database of OSC ballot measures, LandVote, which dramatically simplifies data  
32 acquisition for researchers. The Center for Transportation Excellence (CFTE) has attempted to  
33 create a similar database, but it is not comprehensive and lacks many of the variables contained  
34 in LandVote.

35 Early studies of OSC ballot measures outcomes used non-spatial regression models. Later  
36 work adjusted for spatial error that may be introduced from neighbors' influence on other  
37 neighbors, targeted political advertising, or other spatially related variables (19). Several other  
38 studies extended analysis methods, including Shanahan (20), who utilized principal component  
39 analysis to further refine variable predictors.  
40

#### 41 **Transportation Measures**

42 Previous studies have found a number of favorable variables for transportation funding  
43 measures. The methods utilized in determining the likelihood of appearance, support, and  
44 passage of transportation funding measures have varied widely. Case studies have been used to  
45 look at particularly important referenda. Peterson et al. (21) found that in funding for  
46 transportation infrastructure improvements like the Seattle monorail that spatial proximity to the  
47 improvement plays a significant role in voting yes. They also find that collective considerations

1 are significantly related to party affiliation; Democrats were more likely to support the monorail  
 2 even if their spatial relationship to the development meant little or no personal use. Paget-  
 3 Seekins (22) used discourse analysis to determine that the Atlanta region’s \$8.5 billion  
 4 transportation referendum in 2012 failed to pass due to an alliance of opposition from the Tea  
 5 Party, NAACP, and the Sierra Club.

6 Of all the transportation measures studies, none have used the more robust analytical  
 7 methods found in the OSC measure literature. Several studies use community characteristics to  
 8 model transportation measure outcome. Dixit et al. (23) and Rainville (24) examined transit  
 9 ballot measures across the U.S. Hannay and Wachs (25) examined three measures in Sonoma  
 10 County, CA. Manville and Cummins (26) explicitly rejected the examination of voting outcome  
 11 due to its aggregate nature. Haas et al. (27) examined a dataset of transit-related measures from  
 12 1990-1998, but these were neither exclusively funding-related nor covered other modes of  
 13 transportation. Surveys that utilize individual-level data have also been used to explore fewer  
 14 measures in detail (28). Table 3 outlines variables that have been examined in the literature and  
 15 how they influence measure success.

16  
 17 **TABLE 3 Variables that may influence measure outcome explored by previous studies and**  
 18 **their observed effects.**  
 19

| Increases Likelihood                  | Decreases Likelihood                                     | Mixed results        |
|---------------------------------------|--|----------------------|
| Bond as funding mechanism (25)        | Tax as funding mechanism (25)                            | Income (25)          |
| Percent Hispanic (29)                 | Existing tax burden (30)                                 | Percent black (21)   |
| Percent Democrat (21, 25)             | Percent Republican (29)                                  | Percent elderly (23) |
| Continuation of existing funding (29) | Other funding measure(s) on ballot (31)                  | Percent renters (23) |
| Citizen oversight committees (29)     | Previous attempts to pass similar measures (29)          | Percent young (23)   |
| Population density (23)               | Public perception of good transportation conditions (29) |                      |
| Transit user (21)                     | Existing measure (25)                                    |                      |
| Close proximity (25)                  |  |                      |
| Multimodal (25)                       |  |                      |
| Set duration for funding (29)         |  |                      |

20  
 21 This study, with an aggregated dataset of transportation funding measures and methods  
 22 adopted from OSC analysis, extends existing research to apply these methods to a  
 23 comprehensive transportation ballot measure dataset.

## 1 **METHODS**

2 This study analyzed ballot measure outcomes to determine which variables explained the passage  
3 of transportation funding measures and the nature of the relationship between the explanatory  
4 variables and passage. A multiple logistic regression model with elastic net regularization was  
5 used to determine what variables were related to measure passage and the direction and  
6 magnitude of their relationship. This chapter first explains the rationale of using a multiple  
7 logistic regression model. It then explores the specification of predictor variables. It concludes  
8 with a description of the data sources used.

9

### 10 **Model**

11 Regression analysis describes the relationship between a dependent outcome or response variable  
12 and one or more independent explanatory variables. Multiple regression is used when more than  
13 one explanatory variables are used. Logistic regression is used when the response variable is  
14 categorical.

15 The response variable in this study was the binary outcome of pass or fail (not pass).  
16 Some studies have used the percent yes vote as a continuous outcome variable. However, the  
17 question being investigated in this study is what factors influence passage (i.e., pass or fail) of a  
18 measure. Logistic regression analysis addresses this question more directly by using the discrete  
19 binary categories of passage or failure as the outcome rather than percent yes vote. Furthermore,  
20 California has several different thresholds of percent yes votes needed to pass a measure for  
21 different types of funding mechanisms (15). Logistic regression of passage is agnostic to vote  
22 requirement thresholds.

23 Due to the different thresholds for passage, the binary choice of pass/fail was used as the  
24 dependent variable instead of the proportion of yes votes or the log-odd ratio of yes votes  
25 typically employed in ballot measure analysis. Proportion yes votes as the dependent variable is  
26 appropriate when the measure passage threshold is the same for all votes. However, given  
27 California's two-thirds and fifty-five percent thresholds for revenues for specific purposes,  
28 measure passage as a binary outcome sidesteps evaluation challenges presented by varying  
29 threshold requirements.

30

### 31 **Specification**

32 A regression model is fitted or estimated by calculating values based on the sample data for the  
33 unknown population data. There are a number of techniques to estimate models. The most  
34 common method for logistic regression is Maximum Likelihood Estimation (MLE), which  
35 determines estimators that maximize the likelihood of the sample observations given the  
36 explanatory variables used. However, MLE is limited in its ability to adjust for collinearity of  
37 explanatory variables and for low sample sizes relative to the number of explanatory variables.  
38 As the ratio of explanatory variables to sample size increases, variability of the estimators  
39 increases. This results in overfitting of the model. Given the high explanatory variable candidates  
40 to sample size ratio in this study, the elastic net regularization was also used to penalize extreme  
41 estimator values balanced against the goodness of fit of the estimation.

42

### 43 **Data**

44 California ballot measures were collected from the California Elections Data Archive (CEDA)  
45 for the years 1995-2015. Ballot measures from Oregon and Washington were primarily retrieved  
46 from the state's Secretary of State Office for the years 2005-2015. In Oregon, some measures

1 were retrieved in person from the county election’s clerk. Only cities with populations greater  
2 than 100,000 or counties with cities of that size were included in the study.

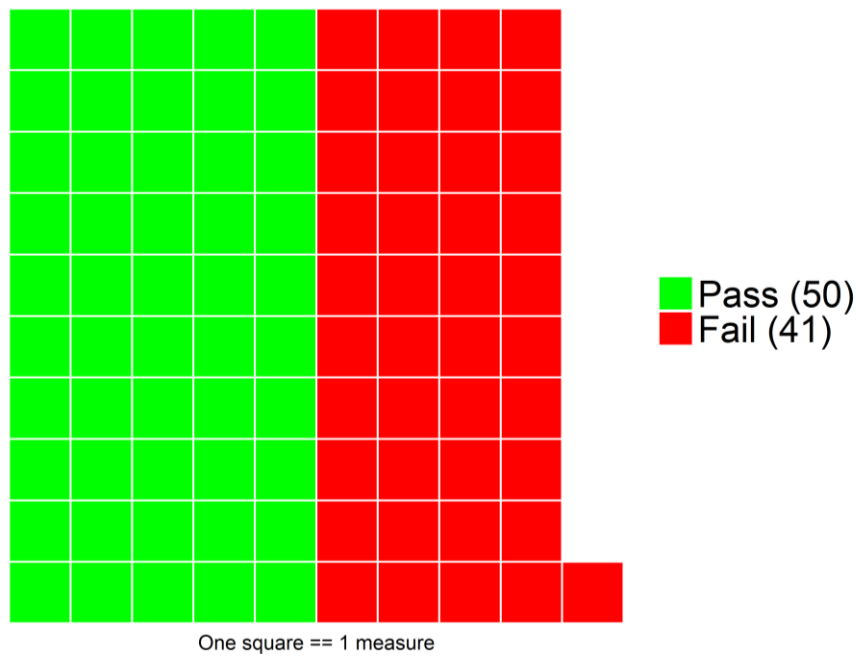
3 Sociodemographic data were obtained from the U.S. Census Bureau 1990 Decennial  
4 Survey, 2000 Decennial Survey, and the 2006 through 2015 American Community Surveys  
5 (ACS) 1-year Estimates. Linear interpolation was used for calculating between decennial census  
6 years and between 2000 Decennial Survey and 2006 ACS Survey.

7  
8 **RESULTS**

9 55% of measures (55 of 91) passed. 96% of measures (87) used taxes as the funding mechanism.  
10 53% of measures (48) were held in cities. All 91 measures contained a road component. 14  
11 measures had transit component, 10 had a pedestrian component, and 5 had a bicycle component.  
12 Figures 5-8 depict these descriptive statistics.

13

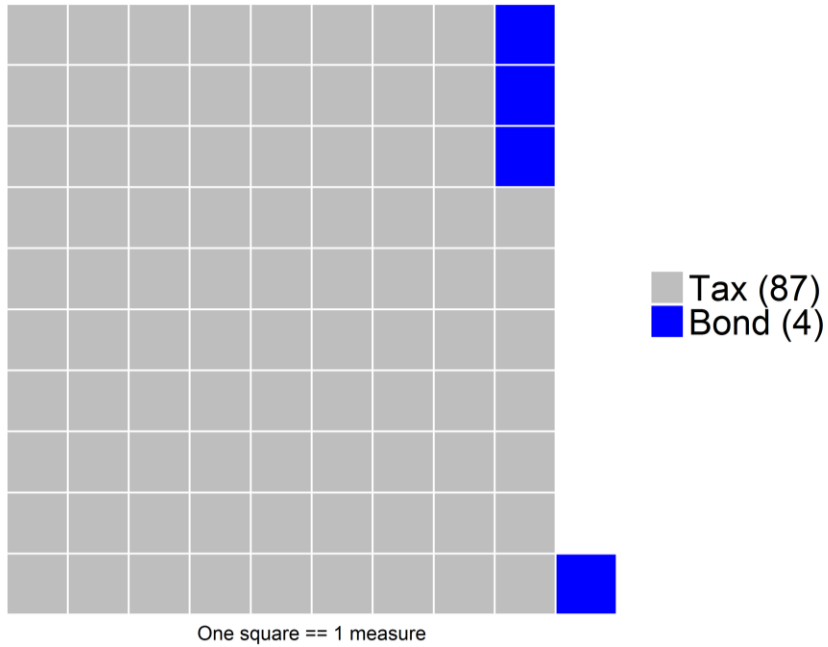
Measure Outcomes



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**FIGURE 5** Counts of measure results by pass or fail.

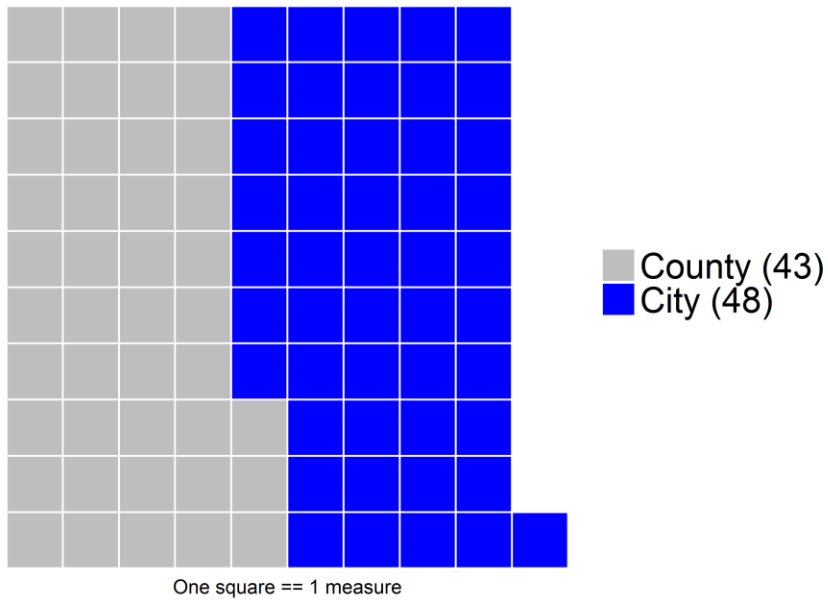
### Measure by Funding Type



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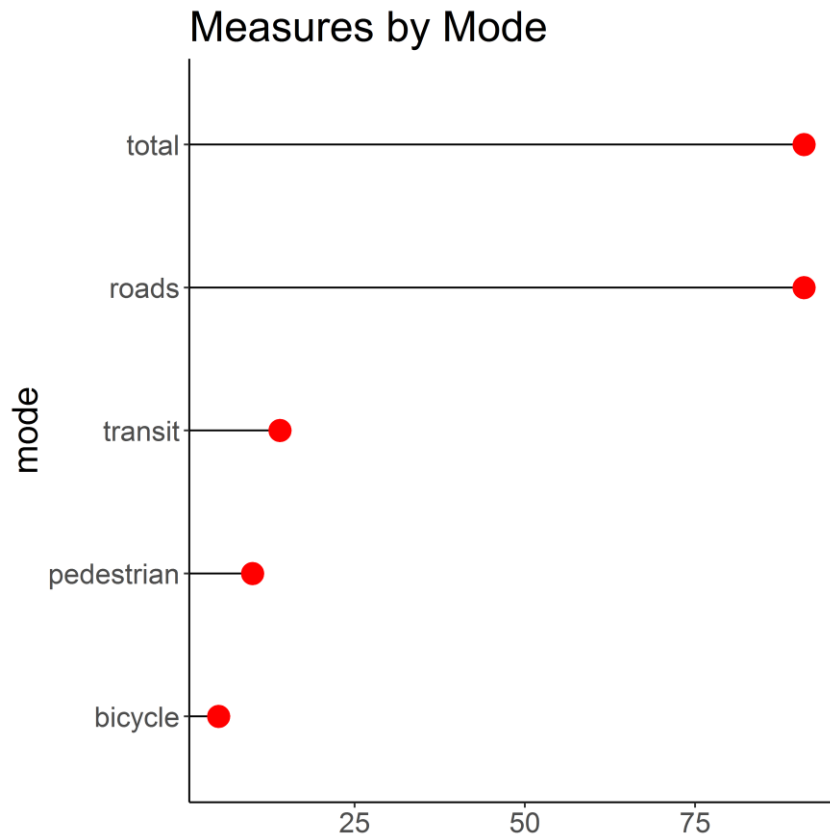
**FIGURE 6** Counts of funding mechanisms specified in measures.

### Measure by Municipal Level



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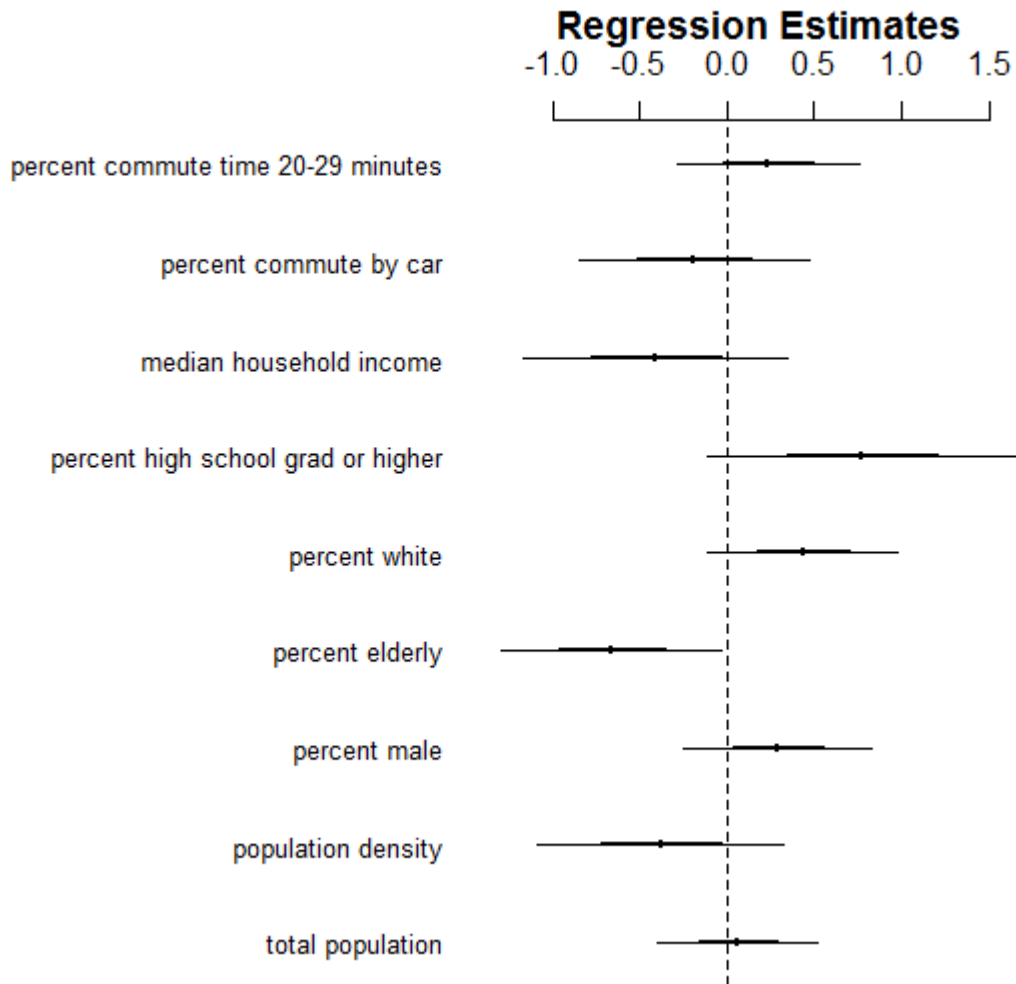
**FIGURE 7** Counts of government type holding measures.



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**FIGURE 8 Counts of listed modes in summary text of measures.**

A multiple logistic regression model with the socio-demographic covariates Total Population, Population Density, Percent Male, Percent Elderly, Percent White, Percent High School Education, Median Household Income, Percent Commute By Car, and Percent Average Commute Time found that the percent elderly population of a community was significantly associated with measure outcome. A 1 percent increase in the percentage of elderly residents decreased the odds of measures passing by 0.68% ( $p = 0.03$ ) (Figure 9).



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**FIGURE 9 Standardized regression coefficients plot depicts relative influence of variables. Only percent elderly variable is significant.**

**CONCLUSIONS**

The work of explaining measure passage with measure characteristics and socio-demographic characteristics of communities requires further development before it can be a useful tool for policymakers considering transportation funding strategies.

Local governments and states should carefully consider the role of ballot measures. As Goldman (32) points out, while raising much-needed revenue, local or specific measures may undermine or conflict with regional or comprehensive planning goals and may have unintended, or intended, negative equity implications.

States and municipalities should also remain cautious about relying too heavily on ballot measures. Increases to local taxes and bond sales deprive jurisdictions of funds for other core projects (2).

Future research could extend the ballot measures by both time and state. Some initial work has been done by Green (33) on how governments decide to place referenda on ballots.



1 Combining research on government decision making with referenda outcome analysis may result  
2 in more targeted and strategic legislative referrals.

3 OSC measure studies hold many exciting research possibilities as well. Banzhaf, Oates,  
4 and Sanchirico (34) examined whether local leaders, environmental organizations, or both were  
5 targeting OSC measures in communities where they were more likely to succeed and where there  
6 was more ecological value. Similar investigations could be made for whether sustainable  
7 transportation measures are being strategically targeted.

8 Organizations that track transportation funding ballot measures, including Center for  
9 Transportation Excellence, The Eno Center for Transportation, Transportation 4 America,  
10 National Conference of State Legislatures (NCSL), and Ballotpedia should coordinate data  
11 collection and dissemination. Government leader and policymaker membership organizations  
12 like NCSL would do well by their members if they helped create a database that would set the  
13 stage for discovering more actionable findings for their members. The Trust for Public Land's  
14 LandVote database provides an excellent model for ballot measure tracking.

15 Model modification could be improved by examining how different thresholds of yes  
16 percent needed may influence outcome. Logistic regression controls for different thresholds  
17 assuming that voters respond the same way to a simple majority, 55%, or two-thirds threshold,  
18 but threshold may influence voter behavior (i.e., a higher threshold encourages more voters to try  
19 and clear the threshold or discourages them from attempting to). Additionally, the analysis  
20 performed assumed a linear relationship. Non-linear regression modeling could be compared to  
21 this study's model to determine if non-linear relationships exist.

1 **REFERENCES**

- 2 1. Goldman, T., and M. Wachs. A Quiet Revolution in Transportation Finance: The Rise of  
3 Local Option Transportation Taxes. *Transportation quarterly*, Vol. 57, No. 1, 2003, pp.  
4 19–32.
- 5 2. Ernst, M., J. Corless, and K. McCarty. *Measuring up: The Trend toward Voter-Approved*  
6 *Transportation Funding*. Surface Transportation Policy Project, 2002.
- 7 3. *Paying Our Way: A New Framework for Transportation Finance*. National Surface  
8 Transportation Infrastructure Financing Commission, 2009.
- 9 4. Goldman, T., S. Corbett, and M. Wachs. *Local Option Transportation Taxes in the*  
10 *United States (Part One: “issues and Trends”)*. Institute of Transportation Studies,  
11 Berkeley, CA, 2001.
- 12 5. Hess, D. B., and P. A. Lombardi. Governmental Subsidies for Public Transit: History,  
13 Current Issues, and Recent Evidence. *Public works management & policy*, Vol. 10, No. 2,  
14 2005, pp. 138–156. <https://doi.org/10.1177/1087724X05284965>.
- 15 6. *SSTI Survey of State and Local Transportation Revenue Sources*. State Smart  
16 Transportation Initiative, 2013.
- 17 7. *Public Spending on Transportation and Water Infrastructure, 1956 to 2014*.  
18 Congressional Budget Office, 2015.
- 19 8. *2015 Status of the Nation’s Highways, Bridges, and Transit: Conditions & Performance*.  
20 U.S. Department of Transportation, 2016.
- 21 9. *Failure to Act: Closing the Infrastructure Investment Gap for America’s Economic*  
22 *Future*. American Society of Civil Engineers, 2016.
- 23 10. Levinson, D. On ASCE’s Report Card. *Transportist*, Nov 18, 2016.
- 24 11. Mostafavi, A., D. Abraham, and A. Vives. Exploratory Analysis of Public Perceptions of  
25 Innovative Financing for Infrastructure Systems in the U.S. *Transportation research part*  
26 *a: policy and practice*, Vol. 70, 2014, pp. 10–23.  
27 <https://doi.org/10.1016/j.tra.2014.10.002>.
- 28 12. *Transportation Governance and Finance: A 50-State Review of State Legislatures and*  
29 *Departments of Transportation*. American Association of State Highway and  
30 Transportation Officials (AASHTO), 2016.
- 31 13. *Transportation Finance at the Ballot Box: Voters Support Increased Investment &*  
32 *Choice*. Center for Transportation Excellence, 2006.
- 33 14. Initiative, Referendum and Recall. *National Conference of State Legislatures*.  
34 [http://www.ncsl.org/research/elections-and-campaigns/initiative-referendum-and-recall-](http://www.ncsl.org/research/elections-and-campaigns/initiative-referendum-and-recall-overview.aspx)  
35 [overview.aspx](http://www.ncsl.org/research/elections-and-campaigns/initiative-referendum-and-recall-overview.aspx).
- 36 15. Reuben, K. S., and P. Cerdán. *Fiscal Effects of Voter Approval Requirements on Local*  
37 *Governments*. Public Policy Institute of California, 2003.
- 38 16. Crabbe, A. E., R. Hiatt, S. D. Poliwka, and M. Wachs. Local Transportation Sales Taxes:  
39 California’s Experiment in Transportation Finance. *Public budgeting & finance*, Vol. 25,  
40 No. 3, 2005, pp. 91–121. <https://doi.org/10.1111/j.1540-5850.2005.00369.x>.
- 41 17. Deacon, R., and P. Shapiro. Private Preference for Collective Goods Revealed through  
42 Voting on Referenda. *American economic review*, Vol. 65, No. 5, 1975, pp. 943–955.
- 43 18. Heckman, J. J. Sample Selection Bias as a Specification Error. *Econometrica*, Vol. 47,  
44 No. 1, 1979, pp. 153–161. <https://doi.org/10.2307/1912352>.
- 45 19. Wu, X., and B. Cutter. Who Votes for Public Environmental Goods in California?  
46 Evidence from a Spatial Analysis of Voting for Environmental Ballot Measures.

- 1        *Ecological economics*, Vol. 70, No. 3, 2011, pp. 554–563.  
2        <https://doi.org/10.1016/j.ecolecon.2010.10.008>.
- 3    20.    Shanahan, E. A. The Paradox of Open Space Ballot Initiatives in the American West: A  
4        New West-Old West Phenomenon? *Studies in sociology of science*, Vol. 1, No. 1, 2010,  
5        pp. 22–35. <https://doi.org/10.3968/j.sss.1923018420100101.002>.
- 6    21.    Peterson, A. F., B. S. Kinsey, H. Bartling, and B. Baybeck. Bringing the Spatial in: The  
7        Case of the 2002 Seattle Monorail Referendum. *Urban affairs review*, Vol. 43, No. 3,  
8        2008, pp. 403–429. <https://doi.org/10.1177/1078087407302065>.
- 9    22.    Paget-Seekins, L. Campaign for the 2012 Transportation Referendum in Atlanta,  
10       Georgia: A Region Divided. *Transportation research record: journal of the*  
11       *transportation research board*, Vol. 2345, 2013, pp. 17–23. [https://doi.org/10.3141/2345-](https://doi.org/10.3141/2345-03)  
12       03.
- 13   23.    Dixit, V., E. E. Rutstrom, M. S. Mard, and R. O. Zielske. Transit Referenda and Funding  
14       Options: Bonds versus Taxes. *Transportation research record: journal of the*  
15       *transportation research board*, Vol. 2143, 2010, pp. 44–47. [https://doi.org/10.3141/2143-](https://doi.org/10.3141/2143-06)  
16       06.
- 17   24.    Rainville, L. *Taxing for Transit: An Exploratory Analysis of Local Option*  
18       *Transportation Taxes*. Tufts University, 2012.
- 19   25.    Hannay, R., and M. Wachs. Factors Influencing Support for Local Transportation Sales  
20       Tax Measures. *Transportation*, Vol. 34, No. 1, 2007, pp. 17–35.  
21       <https://doi.org/10.1007/s11116-006-0006-4>.
- 22   26.    Manville, M., and B. Cummins. Why Do Voters Support Public Transportation? Public  
23       Choices and Private Behavior. *Transportation*, Vol. 42, No. 2, 2015, pp. 303–332.  
24       <https://doi.org/10.1007/s11116-014-9545-2>.
- 25   27.    Haas, P. J., K. S. Massey, L. O. Valenty, and R. Werbel. *Why Campaigns for Local*  
26       *Transportation Initiatives Succeed or Fail: An Analysis of Four Communities and*  
27       *National Data*. Mineta Transportation Institute, San Jose, CA, 2000.
- 28   28.    Green, A. D., M. Neiman, S. Bockman, and B. Sirotnik. Public Support for  
29       Transportation Sales Taxes in California: A Two County Assessment. *California journal*  
30       *of politics and policy*, Vol. 5, No. 4, 2013, pp. 645–670. [https://doi.org/10.1515/cjpp-](https://doi.org/10.1515/cjpp-2012-0009)  
31       2012-0009.
- 32   29.    Hamideh, A., J. E. Oh, S. Labi, and F. Mannering. Public Acceptance of Local  
33       Government Transportation Sales Taxes: A Statistical Assessment. *State and local*  
34       *government review*, Vol. 40, No. 3, 2008, pp. 150–159.  
35       <https://doi.org/10.1177/0160323X0804000302>.
- 36   30.    Johnson, E. R. *Why Do Transportation Sales Tax Measures Succeed?* thesis. California  
37       State University, Sacramento, Sacramento, CA, 2011.
- 38   31.    Matsusaka, J. G. Ballot Order Effects in Direct Democracy Elections. *Public choice*,  
39       Vol. 167, No. 3, 2016, pp. 257–276. <https://doi.org/10.1007/s11127-016-0340-9>.
- 40   32.    Goldman, T. Transportation Tax Ballot Initiatives as Regional Planning Processes.  
41       *Transportation research record: journal of the transportation research board*, Vol. 1997,  
42       2007, pp. 9–16. <https://doi.org/10.3141/1997-02>.
- 43   33.    Green, A. D. County Governments and Democratic Decision Making: Explaining Why  
44       Counties Seek Approval of Local Option Sales Taxes. *County Governments and*  
45       *Democratic Decision Making: Explaining Why Counties Seek Approval of Local Option*  
46       *Sales Taxes*, Vol. 14, No. 1, 2014, pp. 50–71.  
47       <https://doi.org/10.1177/1532440013520242>.

- 1 34. Banzhaf, H. S., W. E. Oates, and J. N. Sanchirico. Success and Design of Local
- 2 Referenda for Land Conservation. *Journal of policy analysis and management*, Vol. 29,
- 3 No. 4, 2010, pp. 769–798. <https://doi.org/10.1002/pam.20531>.