Public Involvement and Organizational Performance: Evidence from State Agencies

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Abstract:

Citizen participation in administrative decision making has been widely advocated by both theorists and practitioners of public administration. Despite the importance of citizen engagement, the lack of systematic data has limited the research on its impact upon public service delivery. Is public input only normatively desirable or it has a real value attached to it? We draw on data from state transportation agencies across the country, collected within the GPP project, to test the relevance of two theoretical perspectives about the effect of citizen participation. According to the first theoretical expectation, there is a trade-off between democratic and administrative decision making. According to the second perspective, citizen input provides policy implementors with information about consequences of governmental actions and thus contributes to more effective public programs. We find strong support for the hypothesis that citizen involvement lead to better policy outcomes. Our results demonstrate that there is no necessary trade-off between the values of democracy and bureaucracy and have clear implications for the theory and practice of democratic governance.

The question whether it is possible to reconcile the values of bureaucracy and democracy has long been puzzling students of public administration (Waldo 1948, 1977, Kirlin 1996, Gawthrop 1997, Gormley and Balla 2004, Meier and O'Toole 2006). As Gawthrop notes, 'The engines of bureaucracy and democracy run on different tracks, leaving from different stations and heading for different destinations' (1997, 205). Indeed, while democracy emphasizes participation and decision making that goes from the bottom to the top, bureaucracy values efficiency, hierarchy, and a top-down decision making (Denhardt and Denhardt 2006).

The increasingly complex nature of public policies necessitates that administration possesses technical knowledge to successfully implement them. Over the tenure of their careers bureaucrats develop expertise in their areas of specialization, which allow them to know more about policies than the broader public or its elected representatives (Meier 2000). However, bureaucrats are appointed, they operate with delegated power, and lack accountability. How can citizens be certain that their interests will be taken into account by bureaucrats who judge on the narrow basis of their specialized knowledge? One such mechanism is the direct public participation in the process of administrative decision making. Although not a panacea, inclusion of citizens in the policy process has been advocated by democratic theorists (e.g. Dahl 1992), critical theorist (e.g. Habermas 1996), new governance scholars (see for a review Bingham, Nabatchi and O'Leary 2005, Sirianni 2009) and public sector practitioners (Ebdon and Franklin 2004, 2006). Public administration literature is abundant of studies examining specific instances of public involvement, as well as of recommendations on dos and don'ts in participatory process. Although extensive, previous research has been mainly focused on qualitative analyses from a small number of case studies (Robbins et al 2008, Ebdon and Franklin 2004, Halvorsen 2003, Crosby et al 2000, Weeks 2000, Kathlene and Martin 1991). What is missing is a systematic

analysis relating public involvement to the greater purpose of public administration – to deliver public services in as efficiently and effectively as possible. This research attempts to fill this gap.

We explore here to what extent public managers of states agencies utilize citizen input when setting budget priorities of their agencies and whether public involvement affects organizational performance measured in terms of efficiency and effectiveness of public service delivery. To test the effect of citizen participation on the outputs and outcomes of public sector, we draw on the practices used by state transportation agencies across the 50 states. Transportation has been selected because it is a salient area, in which the public has much in stake. Case studies examining citizen involvement in transportation projects report high interest on the part of the public. After all, each of us uses public roads on a daily basis and has an opinion on how transportations services might be improved. Moreover, public participation is especially desirable in policies where there is a high need for public acceptance (Thomas 1990). Transportation issues do tend to generate strong reaction within the affected communities. There are many examples of frozen highway projects because of the public backlash against them. On the other hand, public involvement, as argued by Thomas (1990), is less appropriate when there is a need for quality. Transportation programs do require quality solutions because public safety is often at stake. In this sense, the department of transportation offers an interesting case to test the effect of public involvement because of the different expectations stemming from the requirements for both social acceptance and program quality.

This article makes three main contributions. First, it examines an important, but understudied link between organizational performance and citizen input. Although public involvement can bring out important second-order benefits related to educating and empowering the public through increasing its knowledge of the policy process, the most important benefit

should be related to its impact on the performance of public programs. By testing whether citizen involvement leads to better policies, this study contributes to our understanding of the implications of public participation for the attainment of organizational goals. Second, it addresses citizen involvement practices at the state agencies, the level of government that has been less studied. The extant research has focused predominantly on the practices of citizen involvement in local governments but not at other levels of government. Third, we study the practices of public involvement in the budget process, where citizen input seems especially needed since administration decides on the allocation of scarce public resources. In a period of financial crisis and scarce resources, the question about the utility of participation is timely and important.

We find strong support for the hypothesis that citizen involvement lead to better policies. This finding demonstrates that there is no trade-off between the values of democracy and values of bureaucracy. No matter how citizen input is operationalized—as an additive index or a weighted index—it is positively and significantly associated higher organizational performance. This result has important implications for the theory and practice of democratic government. The evidence presented here indicates that citizen participation can generate not only benefit for the participants in the process—both administrators and citizens—but also has a broader social value as it enhances program performance. Such finding endorses the efforts of theorist and practitioners of public administration to seek citizen input when deciding on budgetary priorities in the development and implementation of public programs.

In addition, our research documents a new fact about the use of citizen participation at the state level departments. Most importantly, we find that the use of citizen involvement in agency decision making is ubiquitous. All but one DOT in our sample utilized some form of public input

when setting their budgetary priorities. In addition, state agencies use a variety of methods for soliciting public input, which indicates that they take seriously the task of engaging citizens.

The paper proceeds as follows. The next section discusses the theoretical perspectives developed in the literature with regard to the effect of public involvement and review as well as the extant empirical research on this topic. Then we describe the data and develop the models to test the relevance of the two theoretical expectations about the effect of public participation on organizational performance. We use two separate models to assess the effect of citizen involvement on the efficiency and effectiveness of state transportation departments. Next, we present the results of the models and discuss their implication for the theory and practice of democratic governance. The last section concludes and outlines possible avenues for future research.

Citizen Participation and Organizational Performance: Theory and Extant Research

Do state agencies perform more efficiently and effectively when citizen participate in the policy process? Supposedly when citizen are involved, the agencies' resource allocation decisions will reflect better citizen preferences. Public involvement in administrative policy process has been widely advocated by theorists and practitioners alike since 1950s till nowadays. According to democratic theorists (e.g. Dahl 1989, Urbinati and Warren 2008), the importance of citizen involvement stems from the principle that those affected by public policies should have a meaningful and equal opportunity to influence policy outcomes. New governance scholars emphasize "the collaborative nature of modern efforts to meet human needs" (Salomon 2002, vii) and encourage public administrators to engage citizens in a more active manner. It is not clear, though, whether the incorporation of citizens' will in administrative decision making will lead to a more efficient and effective provision of agency's services. Do these two variables pull

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in the same or in opposite directions? The few efforts to analyze the link between policy effectiveness and citizen involvement offer mixed evidence and have been confined to individual case studies (Kathlene and Martin 1991) or compilation of case studies (Thomas 1990).

The literature extends two competing expectations about the effect of citizen participation on agency performance. The first expectation is based on the nature of bureaucratic decision making which is essentially different than democratic decision making. Public administration scholars have long acknowledged the inherent tension between bureaucratic decision making and citizen participation (e.g. Gawthrop 1997). Administration of public policies is considered a professional pursuit requiring expertise to be tackled in an efficient and effective manner. In fact, bureaucracy is thought to derive its legitimacy as a policy maker from its expertise (Dahl 1989, Stivers 1990). On the contrary, the public lacks specialized knowledge or policy expertise. In addition, citizens are often reluctant to devote time and effort to understand the intricacies of public issues, as indicated by the chronically low attendance of public hearings[1]. However, in democratic societies the public "owns" the government, the people are the ultimate principals that delegate authority to policy makers—both elected and appointed. As Stivers notes, the question is 'whether citizens' qualifications or intensions would constraint or divert the agency mission' (1990, 89). The tensions between bureaucratic and democratic decision making are explained well in Kweit and Kweit (1984), "The ideal bureaucracy, described by Max Weber, relies on the expertise as a means to achieve efficiency. … In addition, bureaucratic decision making implies a centralization of authority. … In the ideal bureaucracy there is no place for citizen participation. Citizens lack technical expertise, are unfamiliar with bureaucratic routines, and are emotionally involved in issues rather being detached and rational. Citizens are outside

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[1] See Kathlene and Martin (1991) for a discussion on alternative participatory mechanisms with potential to create greater willingness for participation on the part of citizens.

the hierarchy and therefore hard to control. As a consequence, participation may increase the time needed to reach decision as well as the level of conflict. The end result hampers the efficiency and rationality sought in the ideal bureaucracy." A growing body of literature argues that public deliberation does lead to an increased polarization in the society (e.g. Fiorina 2005, Stasavage 2007). Moreover, scholars widely recognize that there are costs associated with public participation (Robbins et al 2008, Ebdon and Franklin 2006, Irvin and Stansbury 2004, Thomas 1990). Participation is time consuming and has the potential to slow down decision making since the public needs to be informed and even educated first. In this sense, "the per-decision cost of citizen participation groups is arguably more expensive than the decision making done by a single administrator" with the appropriate expertise and experience (Irvin and Stansbury 2004, 58). There is also a concern that most actively involved citizens might represent private interests that are very different than the broad public interest (Box 1991, Curry, 2001, Ebdon and Franklin 2004). As Stivers (1990, 89) sums it, "the view prevails that the democratization of administration is only achieved through the sacrifice of a telling measure of effectiveness." Based on this explanation, we should find a negative relationship between citizen input and performance. If the prospects about the program effectiveness are not explicit, there is a clear theoretical expectation that participation will be associated with less efficiency and thus it will be hampering overall performance. Thus, the value of participation be confined to the process of participation itself and the benefits of having better informed and educated public with a clear acknowledgment of the trade-offs associated with participatory process.

According to the second expectation, public involvement should lead to better policies and thus it should be associated with a greater attainment of public program goals (Stivers 1990, Roberts). Irvin and Stansbury (2004) identify two tiers of benefits that should be taken into

account when evaluating effectiveness of citizen participation: process-oriented (benefits for the participants from the process of participation such as the prospect of having more educated and cooperative public) and outcome-oriented (better policy and implementation decisions). How can citizens' judgment lead to better policies? Since bureaucrats make decisions on the basis of their narrow specialization, they might not be able to foresee all consequences of public policies. As Dahl comments (1989, 337), decisions about public issues require "judgments both moral and instrumental. These decisions are not and cannot be strictly about ends, but neither are they nor can they be strictly about means. … [P]recisely because the knowledge of the policy elites is specialized, their expert knowledge ordinarily provides too narrow a base for the instrumental judgments that an intelligent policy would require." Thus citizen involvement might be associated with more effective policy implementation if citizen input leads to smarter solutions. Public administration scholarship also strongly endorses the community involvement in administrative decision making. For Stivers (1990, 97), "through sharing in governance", citizens and administrators can "chose actions that gradually reshape institutions in directions which they believe to be right." Roberts (1997) associates public involvement in agency decision making with a specific managerial style, called generative approach. An important aspect of her argument is that managers can enhance efficiency and effectiveness, when they promote "learning process that develops people capacity to create new solutions", "when people are invited to help craft policy and set organizational direction" (1997, 125). In sum, if 'citizen involvement is intended to produce better decisions and thus more efficiency benefits for the whole society' (Irvin and Stansbury 2004, 56), then citizen participation should have a real value besides its normative desirability and higher citizen input should lead to a better performance of public services.

Extant scholarship posits that the effect of citizen participation should be measured against the goals (Ebdon and Franklin 2004, 2006, Irvin and Stansbury 2004, Thomas 1990). Most evaluative studies have been centered on the benefits of the participatory process itself (although Kathlene and Martin 1991). Research finds that that participants develop knowledge and better understanding of the inherent complexities and trade-offs involved in public issues (Halvorsen 2003, Kathlene and Martin 1991), as well greater appreciation of administrators' job (Ho and Coates, 2006). The link between citizen involvement and organizational performance has been understudied because of both practical and methodological limitations. As Stivers (1990, 93) points out, one such reason is the "the legendary difficulty of evaluating the impact of public programs on the problems they are intended to solve" (also in Irvin and Stansbury 2004). In addition, the lack of systematic data on the participatory practices used by government agencies has confined the extant research to sporadic case studies with little comparability among them. The present study attempts to overcome these difficulties by utilizing a set of measures to assess performance of public organizations and by drawing upon systematic data on the patterns of citizen involvement at the state level agencies.

Data and Method

Unit of Analysis

Our data on citizen participation come from a large survey administered within the 2005 Government Performance Project (GPP).[2] The major instrument to gather information is an

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[2] The Government Performance Project (GPP) is a periodic survey conducted of state government management practices in the areas of human resources, budgeting and financial management, infrastructure and information. The project is sponsored by The Pew Charitable Trusts and its Center on the States and involves both academic and journalist partners for the collection, analysis and reporting of data. A complete accounting of this research methodology, survey development, responses and analyses of the GPP survey is posted at: www.pewcenteronthestates.org/gpp. This paper was developed using data from a number of sources, including that

online questionnaire sent to state officials, administrators, staff and managers.[3] The survey covers a range of issues under each management area.[4] The information on citizen input is collected under financial management section. More specifically, it comes from the money sub-section where the states' performance is assessed based on whether they provides citizens opportunities for public input about the budget. The corresponding survey question asks administrators to identify the strategies that their agency has used to generate input from citizens concerning budget priorities, development and/or assessment. The particular question states, "We are interested in any strategies that your agency has used to generate input from citizens concerning budget priorities, development and/or assessment. Specifically, if your agency has engaged in any of the strategies below to gain citizen input, indicate if the strategy has been useful in terms of the outcomes listed. (Check all that apply for each strategy.)"

We focus on data collected from the Department of Transportation across all states. Each state department of transportation was asked to respond to a subsection of the GPP survey and 39 states provides valid responses to the citizen input question, which provides a response rate of 78%. We pooled three years (2004-06) data on citizen input and control variables to have a total of 117 cases for our analysis. Survey respondents are provided with a matrix in which they can check citizen input strategies at different stages of budget stages. Among 39 states giving valid response to this question, Alabama is the only state indicating no strategies used to seek for citizen input at any of the four stages. Table 1 indicates the number of states adopting certain strategy to seek citizen input at different stages of budget process. The table follows the format

of the original survey question. All performance and control variables are taken from the Bureau of Transportation Statistics.

The Department of Transportation was selected for both theoretical and methodological reasons. First, it offers an interesting case to study the effect of public participation. Transportation is a salient policy issue, in which the public has much in stake. Prior research showed that inclusion of citizens in transportation decisions leads to more effective solutions (Kathlene and Martin 1991). On the other hand, transportation decisions might require specialized knowledge that might prevent broader public from much participation. Thomas (1990) identifies two dimensions to judge the appropriate degree of public inclusion: quality and acceptability of administrative decisions. Transportation as a policy area scores high on both criteria. In other words, it is far from obvious what effect citizen participation might have on the decisions about transportation issues. Second, the Department of Transportation is pretty uniform across the country: each state has such a department and they share similar responsibilities, that is, the development and maintenance of state transportation systems, including all modes of transportation (Goetz 2007). We focus here on highway transportation as one of the most developed modes of transportation. Moreover, historically transportation departments started their operation as highway agencies (Goetz 2007).

Measuring Citizen Participation

The key independent variable in this study is the measure of citizen input. We create two sets of indices to operationalize the practices of citizen involvement used by state transportation agencies at each stage of budget preparation process. The first index is additive and treats each strategy of seeking citizen input with same weight. That being said, if a state uses three

mechanisms to solicit citizen input at the stage of information sharing, the citizen involvement for this state at the information sharing stage is 3. Each state will have four index scores at each stage of budget process and a total index score indicating total number of strategies used at all stages.

The second set of indices treats the strategies differently. We divide the methods based on how actively state administrators are seeking citizen input. Some methods require more efforts and involvement on the part of state administrators than others. In this sense, methods such as "telephone hotline" and "website" as more passive way of seeking citizen input, because citizen are those who need to initiate the "input" process by calling the agency or visiting its website. Some passive methods, however, might better at reaching out more citizens and thus providing input that is more representative for the positions of citizenry (see Robbins et al 2008 for discussion on this topic). We also ranked the strategies considered to be active in order from least active to most active. Also, we give more weight to strategies allowing for two-way communication between administrators and citizen. There is a consensus in the literature that participation is more beneficial when it involves two-way communication (Kathlene and Martin 1991, King et al 1998, Thomas 1995). In terms of specific weights, passive strategies are coded as 1. Active strategies are coded as 2 for "citizen/client surveys", 3 for "budget simulation" and up to 7 for "citizen advisory board". The additive index ranges from 0 to 25, while the range for the weighted index is from 0 to 109. Higher values indicate greater use of citizen input by administrators in making decisions about the allocation of public resources.

There are several limitations on these indices. First, they are crude measures for citizen input, as they refer more to its quantity than to its quality. The focus of the indices is not on how effectively these strategies achieve citizen involvement. The additive index only indicates the

number of mechanisms used at any stage of the budget process. Second, the survey question is asking whether certain strategy is used, but not how many times it is used. Third, the weighting mechanism takes into account how active a certain strategy is supposed to be, but not how well such strategy is implemented. Some may argue that a well-managed focus group may work better than a public hearing for soliciting citizen input; however such considerations are beyond the scope of this study. Again, the indices serve as ordinal indicators of the degree of citizen input without considering the quality of each strategy.

Dependent Variables

Both efficiency and effectiveness are necessary for agency performance (Roberts 1997, Poister 2004). That is why we estimate a series of models including both cost-based measures of organizational performance as well as some outcome measures directly related to the mission of organization. We regard organizations are goal-oriented. Organizational performance then is the extent to which an organization accomplishes its intended goals. The mission of the state transportation agencies includes promoting efficient, safe, and environmental sound transportation. The focus of our analysis is on the first two goals: efficiency and transportation safety.

We use cost-based measures to operationalize organizational efficiency. Efficiency is defined here as the ability of organization to produce outputs with minimum resources. In this sense, it is the most efficient use of taxpayers' dollars. As Poister (2004) states it, "efficiency measure focuses on the ratio of outputs to the dollar cost of the collective resources consumed in producing them." We measure cost efficiency as annual operating expenditures for vehicle mile traveled (OE/VMT) per state. Alternatively, we can measure efficiency as operating expenditures

per mile. However, we believe that expenditures per vehicle mile traveled is a better measure because it takes into account the traffic volume and allow comparison between state systems that vary in length, number, and utilization. Lower values of this variable indicate more efficient policies.

Organizational effectiveness, in turn, represents the extent to which a program achieves its intended outcomes and desired results (Poister 2004). To assess effectiveness of the state departments of transportation we use a measure related to the safety goal stated in the DOTs' mission statements. We operationalize safety as the highway fatality rate per 100,000 residents in each state (FATALITY). Obviously, lower the values of this measure are associated with higher performance, and vice versa.

Although those measures of efficiency and effectiveness could not capture all sides of organizational performance, they do provide some valuable information on how well the departments meet its intended goals – both output-related and outcome-related. Finally, some authors identify a possible trade-off between efficiency and effectiveness, so we check for the existence of such trade-off too.

Control Variables

To identify the relevant control variables, we follow the approach used by Meier and O'Toole (2003) in their study on the effect of managerial networks on organizational performance. More specifically, we structure the control variables, so they tap the effects of both opportunities and constraints in DOT's organizational environments. We cluster the environmental variables to account for task difficulty facing the transportation agencies in

different states and for their program resources. The data for all environmental variables come from the state level transportation statistics collected by the Bureau of Transportation Statistics.

Task difficulty varies across states as some public roads are easier to maintain than others. We include three different measures to capture the effect of task difficulty: road condition, the number of road bridges, and their condition. As indicated by state transportation statistics, the state roads quality is categorized as very good, good, fair, mediocre and poor. We operationalize the road condition variable (ROADCON) as the percentage of public roads below good quality in the state. Similarly, bridge condition (BRIDGECON) is measured as the percentage of structurally deficient and functionally obsolete bridges. The third variable related to task difficulty of transportation agencies (NBRIDGES) is a count of total number of existing bridges in the state. Since state expenditures to maintain public roads and bridges in a particular year are expected to depend on their condition from the previous year, we use one year lag in the operationalization of these variables. We expect that all constraint variables will be negatively associated with organizational performance in terms of both outputs and outcomes.

We also include a set of variables to control for the effect of program resources on agency performance. Although having more resources does not automatically mean a better performance, the resources enable organizations to pursue their goals. So we expect that organizational resources will be positively associated with organizational performance. To capture the effect of resources, we include measures of annual transportation revenues collected by state government (REV), federal funding for public transit (FEDFUND), and average salary of state employees (AVEPAY). We also added a variable capturing the effect of gas prices (AVEGAS). We expect that higher the gas prices will be associated with lower number of cars on highways and hence with less state spending and lower fatality rates. Although not exactly a

resource variable, the average gasoline price in each state is included in the model based on the assumption that it alleviates the task of transportation agencies and thus should be associated with better results. Finally, in the model of effectiveness, measured here as fatality rate per 100,000 population, we include a variable controlling for law-abiding behavior of highway users. Research on highway safety shows that increased seat belt use is significantly correlated with a reduction in car occupants deaths (Robertson 1996). The variable (SEATBELT) is operationalized as the percentage of drivers and front-seat passengers wearing safety belts. We expect a negative association between seat belt use and number of auto fatalities.

Estimation Routine

[Table 2 About Here]

Based on previous studies of organizational performance, this research models organizational efficiency and effectiveness of DOT as affected by three categories variables—citizen input, task difficulty, and resources. The basic framework can be expressed as:

Efficiency/Effectiveness= f (Citizen Input, Task Difficulty, Program Resources)

Table 2 contains descriptive statistics of the variables in the models. We estimate the above equation using a panel corrected standard error (PCSE) model. Because the data are pooled (three years), we have to deal with the serial correlation and heteroscedasticity. With a common AR(1) parameter, PCSE model corrects for panel-specific heteroscedasticity and serial correlation and provides sets of clear predictions about the effect of the independent variables on organizational efficiency and effectiveness.

Findings

[Tables 3 and 4 About Here]

Tables 3 and 4 present results of panel corrected standard error estimations. Our data provide strong support for the hypothesis that citizen participation affects positively organizational performance. We find that transportation agencies that are more open to citizens and seek public input in a more active manner achieve higher results in terms of efficiency and effectiveness. The results are robust to both specifications of the citizen input variable. In other words, no matter if the citizen input index is weighted or not weighted, other things held equal, the estimation results show that more public involvement leads to less expenditures per vehicle mile traveled and lower highway fatality rate. Moreover, we do not find a trade-off between efficiency and effectiveness, at least for the measures used in this analysis.

In estimation results, significant Wald Chi-square test values demonstrate a good overall fit of all four models. The R-square values show that the models can explain about 59 percent of variation of the efficiency variable (Table 3), and over 75 percent of the variation of effectiveness variable (Table 4).

We start with the evidence from the efficiency models. As indicated by the statistically significant coefficient at the one percent coefficient of the citizen input variable, citizenry contributes to more economical allocation of state resources. The negative sign means that when the utilization of citizen input by transportation agencies goes up, the expenditures per vehicle traveled mile go down. Among the task difficulty control variables, the road and bridge quality variables are associated negatively with efficiency. Bridge condition seems to be strongest constraint for transportation agencies to perform efficiently. The positive and statistically significant coefficient of BRIDGECON indicates that the lower the quality of state bridges the higher the spending per vehicle mile traveled. Although in the expected direction, the road condition variable ROADCON fails to achieve statistical significance at the conventional levels.

Surprisingly, the number of bridges in the state cannot be associated with lower efficiency, as shown by the negative sign and statistically significant sign of its coefficient. Among the resource variables, state revenue and average employee salary seem to affect state expenditures per vehicle mile of travel. The positive sign of REV indicates that richer states can afford to perform less efficiently. As expected, higher salaries provide better incentives to state transportation employees to strive for higher efficiency. The variable AVEPAY is significant, though only at the ten percent level. Finally, average gas prices contribute to efficiency, as revealed by the negative and statistically significant coefficient of AVEGAS. Higher prices deter people from using their cars which results in less vehicles on the roads and hence less state expenditures for road maintenance.

The models estimating the effect of citizen input on organizational effectiveness follow the main patterns registered under the efficiency models. The coefficient of citizen input—measured by both indices—is negative and statistically significant at the one percent level indicating that public involvement is associated with fewer fatalities on public highways. Combined with the evidence from the previous model, this result means that more citizen input enhances both efficiency and effectiveness of state departments of transportation. These findings are consistent with Stivers (1990) and Roberts (1997), who argue that citizen participation leads to smarter public policies. From the control variables in the effectiveness model, the use of seatbelt is the major predictor of fatality rate. The safety restraints are negatively associated with the number of deaths occurring on state highways, as shown by the negative and statistically significant at the one percent coefficient of SEATBELT. This result is consistent with the previous research showing a positive causal relationship between the use of safety belts by drivers and front-seat passengers and car occupants' deaths. Among the resources variables, the

state revenues are associated with higher effectiveness. The coefficient is negative and significant at one percent meaning that financial resources enable state department to pursue better their goals (although the magnitude of the effect is low). Finally, gas prices also contribute to lower number of fatalities by presumably decreasing the usage rate of personal vehicles and thus lowering the risk of crushes. Another control variable that affects significantly the number of fatalities is the quality of bridges. However, the effect of this variable is in the opposite of expected direction. Average salaries of transportation employees and federal funding for public transit do not affect the effectiveness of state transportation agencies measured as the number of highway fatalities.

Conclusions

Citizen participation in administrative decision making has been advocated by both theorists and practitioners of public administration. Theoretical research on citizen involvement argues that engaged citizenry should solve a range of problems related to widespread distrust in government and also bring some second-order benefits for the participants in the process, such as educating the public about the intricacies of policies and increasing the understanding on where both citizen and administrators stand on issues. This study goes further by asking whether citizen participation has a real value for public programs' performance besides the normative desirability of having more engaged public. The extant research has focus on the benefits of participatory process, but does not discuss the effect of citizen participation on the results achieved by public programs. This study attempts to fill this gap. More specifically, we examine if citizen involvement have effect on the organizational performance in terms of both outputs and outcomes. The literature formulates two opposite expectations about the direction of this effect.

According to the first theoretical expectation, there should be a negative association between the two because democratic and administrative decision making stems from different rationalities and their values not compatible. The second view argues that citizen engagement should lead to smarter policies because participants can provide administrators with information about the possible negative consequences of public programs and thus contribute better policies.

The evidence presented here indicates that there is no necessary trade-off between democracy and bureaucracy and citizens involvement leads, in fact, to better organizational performance. Drawing on data from state transportation agencies across the country, we were able to examine the effects of citizen inclusion on a large scale. Although there might be some occasional difficulties associated with public participation, we find that on average higher citizen involvement is strongly and significantly related to better organizational performance. In other words, state transportation departments utilizing more input from citizenry when setting their budget priorities and doing so in a more active manner achieve higher results in terms on efficiency and effectiveness. This result has important implications for the theory and practice of democratic governance. The inclusion of citizens not only contributes to more trust and understanding on the part of citizens toward government affairs, but also has broader social value related to the performance of public programs. In this sense, these findings substantiate the theoretical expectation set in Irvin and Stansbury (2004) that the benefits from public involvement should be both process-related and outcome-related. Finally, our results demonstrate that collaborative governance works in practice and can serve as an acknowledgement for the long standing efforts to allow those that are affected by government programs to meaningfully participate in their formulation and implementation.

This study presents one of the first large-scale empirical examinations of the broader effect of citizen involvement on program performance measured in terms of both efficiency and effectiveness. There are several avenues for future research, three of which we discuss here. Researchers could examine the effect of citizen participation on different stages of decision making process and determine on which stage it affects performance more significantly. In other words, are citizens more useful as consultant or as judges? Second, it will be interesting to study the citizen inclusion patterns across different state departments and identify the factors that lead to more or less public engagement. Finally, future research might examine the effect of citizen involvement by incorporating other measures of efficiency and effectiveness than those utilized here. The multiplicity of measures would allow for considering more aspects of organizational performance and thus will contribute to a better understanding of the effect of public involvement in the administrative process.

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Table 1
Number of States Utilizing Citizen Inputs at Different Stages

Budget Process Stage / Strategies	Information Sharing	Budget Discussion	Budget Decision	Program Assessment
Telephone hotlines	18	5	9	16
Citizen/client surveys	21	12	17	21
Budget simulation/contingent valuation (willingness to pay) exercises with citizen	5	4	4	3
Focus groups	17	10	14	13
Open forum	25	16	15	12
Public hearings	26	17	18	17
Citizen advisory boards/commissions	23	17	21	15
Other	21	12	17	21

*Total number of state responding to this question is 39.

Table 2
Descriptive Statistics for the Models Predicting Performance

Variables		Mean	Std.	Min	Max
Dependent Variables					
Efficiency Measures					
EXPVMT	Annual expenditures per 1000 vehicle mile traveled	23,546.11	28,118.64	29.95	208,388.00
Effectiveness measures					
FATALITY	Annual fatality rate per 100,000 residents	189.2	80.3	70	480
Independent variables					
Citizen input					
ADDITIVE	Un-weighted index of citizen input	10.54	7.03	0.00	25.00
WEIGHTED	Weighted index of citizen input	46.00	30.17	0.00	109.00
Task difficulty					
ROADCON	% of miles of road rated below good	59.7	15.41	14.5	94.5
BRIDGECON	% of bridges that are structurally deficient and functionally obsolete	26.77	9.43	10.00	55.10
NBRIDROAD	Total Number of Bridges	11,880.95	9,0580.66	748.00	50,271.00
SEATBELT	% of drivers and front-seat passengers with safety belts	80.79	8.50	61.00	96.00
Resources					
REV	Transportation revenues collected by states in million	783,563.80	1,077,188.00	158.00	5,495,285.00
FEDFUND	Federal funding in public transit in million	420.54	1140.43	6.06	11616.34
AVEPAY	Average payroll per employee	34,465.98	4,287.08	25,683.65	51,835.09
AVEGAS	Average gasoline price (cents per gallon)	180.55	29.89	133	253

Table 3
Panel Regression Coefficients for the Models of Efficiency

	ADDITIVE INDEX	WEIGHTED INDEX
CITIZEN INPUT	-148.86*** (40.22)	-37.38*** (10.54)
Constraints		
ROADCON$_{t-1}$	12.75 (24.25)	8.73 24.7
BRIDGECON$_{t-1}$	291.64*** (85.45)	303.94*** (87.69)
NBRIDGE$_{t-1}$	-0.83*** (0.23)	-0.83*** (0.23)
Resources		
REV	0.01*** (0.003)	0.01*** (0.003)
FEDFUND	0.78 (1.17)	0.8 (1.18)
AVEPAY	-0.51* (0.26)	-0.53* (0.27)
AVEGAS	-267.15** (114.89)	-265.64** (114.8)
N	117	117
Wald	1.10E+07***	1.99E+09***
R^2	0.59	0.59

Note: Models provide coefficients from linear regression estimations with a common AR(1) parameter; panel corrected standard errors in parentheses. The dependent variable, OE/VMT, is the dollar cost per vehicle traveled mile.
* $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table 4
Panel Regression Coefficients for the Models of Effectiveness

	ADDITIVE INDEX	WEIGHTED INDEX
CITIZEN INPUT	-2.78*** (0.46)	-0.65*** (0.14)
Constraints		
ROADCON	0.03* (0.42)	0.01 (0.48)
BRIDGECON	-1.73** (0.85)	-1.62* (0.96)
NBRIDGE	-0.001 (0.001)	-0.001 (0.001)
SEATBELT	-3.06*** (0.26)	-2.98*** (0.29)
Resources		
REV	-0.00002*** (0.00001)	-0.00002*** (0.00001)
FEDFUND	-0.001 (0.002)	-0.001 (0.002)
AVEPAY	0.00001 (0.001)	-0.0003 (0.001)
AVEGAS	-1.49*** (0.33)	-1.47*** (0.33)
N	114	117
Wald	487.59***	1117.03***
R^2	0.75	0.77

Note: Models provide coefficients from linear regression estimations with a common AR(1) parameter; panel corrected standard errors in parentheses. The dependent variable, FATALITY, is the state fatality rate per 100,000 residents.
* $p<0.10$, ** $p<0.05$, *** $p<0.01$