

PUBLIC SERVICE USE AND PERCEIVED PERFORMANCE: AN EMPIRICAL NOTE ON THE NATURE OF THE RELATIONSHIP

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Citizen surveys often measure service use as well as perceived performance, typically in the form of quality or satisfaction ratings. But little attention has been paid to the relationship between public service use and satisfaction. How do the service ratings or satisfaction judgements of frequent users differ from those of infrequent users? Is the direction of the use-satisfaction relationship positive or negative? Or perhaps non-linear? And does the direction or form of the relationship differ across services?

Using data from New York, we examine the relationship between use and perceived performance for five services: buses, subways, parks, public libraries, and roads. Interestingly, this relationship often appears curvilinear, with satisfaction initially rising with use, to a point after which it begins to diminish. We offer some substantive interpretations of this pattern, as well as some practical implications for the analysis and understanding of citizen surveys for policy and management purposes.

INTRODUCTION

Local authorities and public agencies in North America, Europe, and around the globe use citizen surveys as a performance measurement and management tool (Fountain 1997; Chan 2004; Johnsen 2005; Taylor 2006). Citizen surveys often measure 'service use' as well as the 'perceived performance' of services, typically in the form of a quality or satisfaction rating. But not much attention has been paid to some basic questions about the relationship between public service use and perceived performance. How do the service ratings or performance judgements of frequent users differ from those of infrequent users? Is the direction of the use-satisfaction relationship positive or negative – or perhaps non-linear? And does the direction or form of the relationship differ across the variety of service provided by local governments?

These are some of the questions related to public service use and perceived performance that often confront both researchers and practitioners interested in using citizen surveys to better understand public performance. In this research note, we use data from a New York City citizen survey to focus on the relationship between use and perceived performance for five basic urban services: buses, subways, parks, public libraries, and road conditions. We briefly review the literature on the use and perceived performance of these public services, then present and discuss our empirical results.

BACKGROUND

Although it is often not analysed in relation to perceived performance or user satisfaction, measuring the use of public services is a common practice in performance measurement and in public administration research generally. For example, public administration researchers have extensively studied the use of public transportation services (Fielding

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1987; TCRP 1999; Nolan *et al.* 2001; Pina and Torres 2001; Morrency *et al.* 2007; Stradling *et al.* 2007). They have also studied the intensity of road use as a performance measure (Poister 1982, p. 68; Ford and Hibbard 2000, pp. 189–90; McMahon 2002, p. 179; DeCorla-Souza 2007). As performance indicators for public libraries, studies have tracked the number of users, the frequency of their visits, and the number of books borrowed (Ammons 1995; Kopczynski and Lombardo 1999; Swindell and Kelly 2000; Ho and Coates 2004; Moore *et al.* 2005; Jacobs and Goddard 2007). Although these studies demonstrate that service use is a major consideration, they do not examine the nature of the relationship between service use and perceived performance.

At the same time, public administration scholars have devoted a fair amount of attention to the question of how citizens perceive or judge the quality of public services (Stipak 1979; Swindell and Kelly 2002a, b; Van Ryzin 2004a, b, 2006). Some of these studies have looked at factors that drive or determine citizens' ratings of or satisfaction with public services (Swindell and Kelly 2002c; Kelly 2003). Other studies have focused on consequences of service satisfaction or dissatisfaction, such as complaining behaviour or trust of government (Bouckaert and Van de Walle 2003; Christensen and Læg Reid 2005; Brewer 2007; Van Ryzin 2007; Gilmour 2008; Van de Walle *et al.* 2008). But these studies typically have not included or fully considered use as a factor in explaining quality judgements or satisfaction levels.

Relatively few studies in the public administration literature have explicitly examined the link between public service use and satisfaction. Poister and Henry (1994) found that recent use of a service had a positive effect on satisfaction; for example, they write: 'The mean ratings of public transportation and parks and recreation programs were 10 points or so higher on the part of recent consumers than with the general public' (Poister and Henry 1994, p. 158). Kelly and Swindell (2003) surveyed citizens, both recent and non-recent users, about their satisfaction with police, fire, and emergency medical services (EMS), and parks, using a US sample of 86 jurisdictions in 12 local governments. They found that recent experience is associated with lower satisfaction with police services but increased satisfaction with EMS and parks. In studies of policing, evidence suggests that citizen satisfaction is higher for initial contacts with the police (response time, initial investigation) than it is for later interactions (such as follow-up investigation) (Poister and McDavid 1978; Cheurprakobkit 2000).

This brief review of prior studies suggests that the relationship between use and perceived performance is not well understood, that it has been shown to be either positive or negative, depending on the service, and that the strength and direction of the relationship also varies across services. None of the studies cited above explicitly consider or test for the possibility of a non-linear relationship between use and perceived performance. Yet we might well expect a non-linear form, since the relationship between public service use and perceived performance is likely to be complex and to vary as one traverses the spectrum from low to high use levels.

DATA AND METHOD

The data for our analysis come from the Survey of Satisfaction with New York City Services (SSNYCS), a citizen survey sponsored by the New York City Council that was conducted in 2000 and 2001. The survey involved telephone interviews of a randomly selected (RDD) sample of about 2000 adult residents in each year, with equal-size samples drawn from each of the five boroughs of New York (for further information on the survey

methods and findings, see Muzzio and Van Ryzin 2000/2001). The questions in the SSNYCS are based in part on a modified version of the model citizen survey developed by the International City/County Management Association (ICMA) and the Urban Institute (Hatry *et al.* 1992). Comparable, ordinal measures of both use and performance ratings are available for five services: buses, subways, parks, libraries, and roads. (It should be noted here that the question about frequency of driving on roads was asked only in the 2001 survey, but still there is sufficient data for analysis.) The wording of questions and the descriptive statistics for these variables are presented in table 1.

ANALYSIS AND RESULTS

We begin first by using error bar charts to graph the relationship between service use and perceived performance. Figure 1 shows the relationship between the use of city buses and their perceived performance. It appears that this relationship is non-linear: perceived performance rises with use to a point, and then begins to diminish. The same pattern is evident for subways, as can be seen in figure 2. This non-linear pattern also emerges to some extent with parks, as shown in figure 3, although with only three use categories it is harder to discern. In contrast, for public libraries, the use-performance relationship appears distinctly more linear, as can be seen from figure 4, although again there are only three use categories. Finally, figure 5 shows the relationship for roads. This again appears non-linear but with no initial positive association; rather, the use-performance relationship becomes increasingly negative the more frequently citizens drive on the city's roads. The appearance of a non-linear relationship across most of these services is an interesting finding in itself, the interpretation and implications of which we will discuss below.

Statistically, these figures suggest that the relationship between service use and perceived performance can be described with a polynomial model, specifically a model including an additional squared (quadratic) version of the independent variable. The basic equation is:

$$\hat{y} = a + b_1x + b_2x^2$$

where \hat{y} is the predicted value of perceived performance, a is a constant, b_1 is the coefficient on the use variable x , and b_2 is the coefficient on the squared (quadratic) form of the use variable x . If perceived performance increases initially with use, then b_1 will be positive. If perceived performance begins to curve down after some point, then b_2 will be negative.

We next use regression analyses to test how well the data fit this model, employing the percent to maximum (PTM) versions of our service use and perceived performance variables (the PTM conversion changes the variables to a 0–1 scale, following Miller and Miller 1991). The descriptive statistics are shown in table 1. Of course, all of the variables are originally ordinal, not interval, and so the use of a polynomial regression in our analyses is at best a crude approximation. However, it is quite possible to measure both use and perceived performance in future research using more precise, interval-like measures. And regression analysis with ordinal data has been shown in simulations to be quite robust (Labovitz 1967, 1971).

Table 2 presents the regression results for the use-performance relationship for the five services, using the basic polynomial model. The quadratic term is indeed significant

TABLE 1 *Descriptive statistics and question wording*

Service use	Not at all	Less often / A few times a year	At least once a month	At least once a week	Almost daily	Valid N	PTM mean (%)	PTM SD (%)
Buses About how often do you ride on New York City buses - would you say almost daily, at least once a week, at least once a month, or less often?	15.9	25.9	12.0	19.4	26.9	4087	53.9	36.6
Subways About how often do you ride on New York City subways - would you say almost daily, at least once a week, at least once a month, or less often?	14.2	21.8	8.8	15.6	39.7	4093	61.1	38.1
Parks About how often during the past 12 months have you or members of your household (including children) used one of New York City's public parks or recreation facilities, including playgrounds or public swimming pools? Would you say at least once a week, at least once a month, a few times a year, or not at all?	19.2	22.4	17.7	40.7	NA	4063	59.9	38.9

TABLE 1 *Continued*

Service use	Not at all	Less often / A few times a year	At least once a month	At least once a week	Almost daily	Valid N	PTM mean (%)	PTM SD (%)
Libraries Let's turn now to libraries in New York City - and please consider only the public libraries and exclude school or university libraries. Other than for group meetings, about how often during the past 12 months have you or members of your household (including children) used the public libraries in New York City, including bookmobiles, telephone reference services, or on-line services? Would you say at least once a week, at least once a month, a few times a year, or not at all?	26.4	23.1	25.9	24.6	NA	4061	49.6	37.6
Roads How often do you drive a car or motor vehicle in New York City? Would you say almost daily, at least once a week, at least once a month, or less often?	24.2	15.0	5.5	14.4	41.0	2000	58.3	41.8
Performance ratings (see note)								
Buses In general, would you rate the New York City bus service available to you as - excellent, good, only fair, or poor?	-	7.8	26.2	50.4	15.6	3329	57.9	27.1

TABLE 1 *Continued*

Service use	Not at all	Less often / A few times a year	At least once a month	At least once a week	Almost daily	Valid N	PTM mean (%)	PTM SD (%)
Subways In general, would you rate the New York City subway service available to you as - excellent, good, only fair, or poor?	-	12.4	28.5	46.1	13.1	3415	53.3	28.9
Parks Would you rate the parks and recreation facilities available to you and members of your household as - excellent, good, only fair, or poor?	-	5.1	21.5	53.6	19.8	3269	62.7	25.9
Libraries In general, would you rate the public library services available to you and members of your household in the past 12 months - as excellent, good, only fair, or poor?	-	2.4	14	51.2	32.4	2952	71.2	24.5
Roads I'd like to ask about the condition of street and road surfaces in New York City. In your answer, please include only city streets and not highways or parkways. Would you say the condition of street and road surfaces in New York City is excellent, good, only fair, or poor?	-	32.6	41.6	23.1	2.6	1983	31.9	27.1

NOTE: In the interview, the performance questions immediately followed the use questions; they are grouped together here for clarity of statistical presentation. 'NA' means not available because it was not read as a response option.

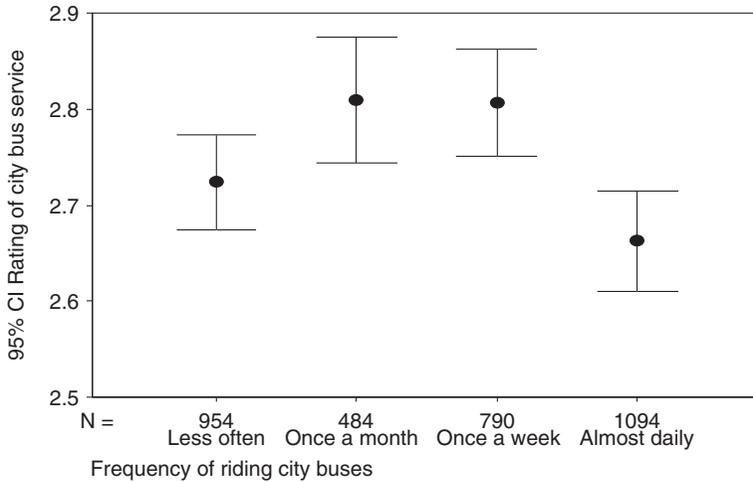


FIGURE 1 *Bus service use and perceived performance*

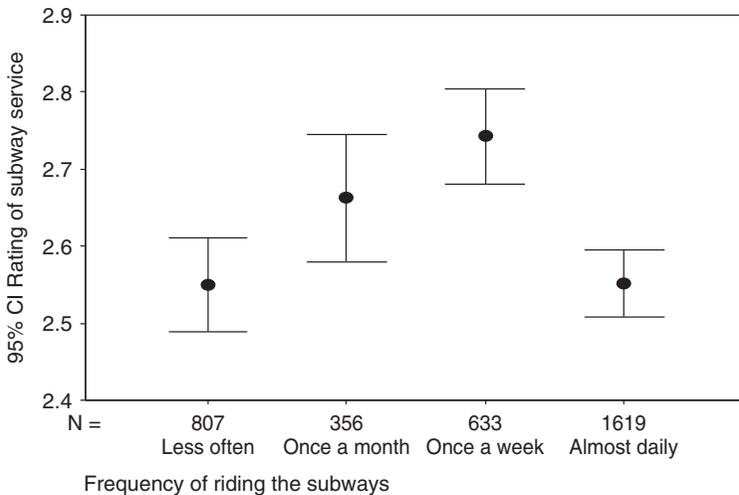


FIGURE 2 *Subway service use and perceived performance*

for all the models with the exception of libraries, for which the statistics suggest that a linear model better fits the data. Nevertheless, these regression results confirm that the use-satisfaction relationship for the rest of the services – buses, subways, parks and roads – is indeed curvilinear. To better illustrate the shape of the relationships, figure 6 uses the coefficients from table 2 to plot the five curved regression lines.

DISCUSSION

Using data from a New York City citizen survey, our results suggest that the relationship between public service use and perceived performance for many public services appears

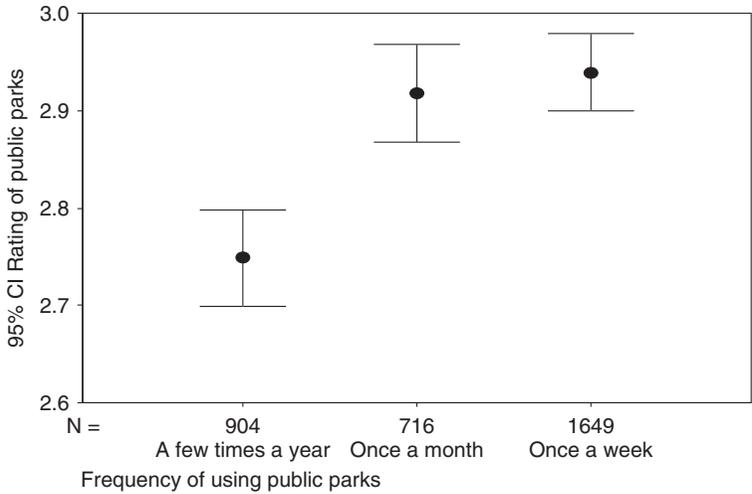


FIGURE 3 *Parks use and perceived performance*

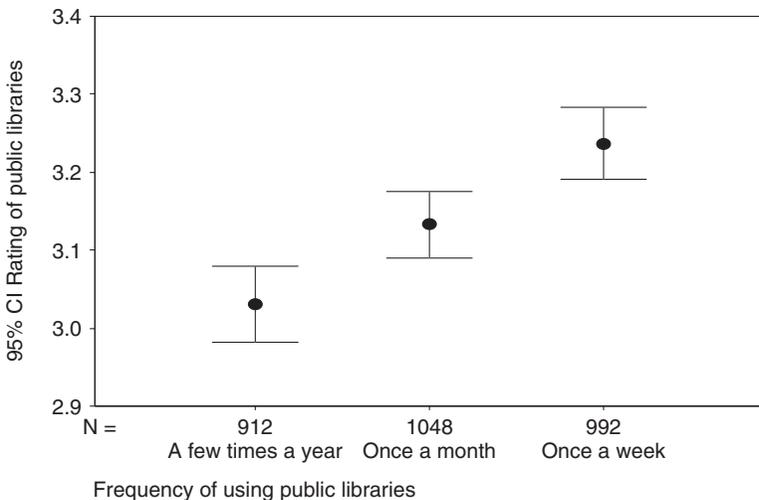


FIGURE 4 *Library use and perceived performance*

to be curvilinear, with perceived performance rising with use, to a point after which it begins to diminish. In the case of road conditions, there is no initial positive slope but only a gradually steeper downward curve. For libraries, the relationship between use and perceived performance is distinctly linear (and positive). Below we offer some substantive interpretations of these findings, as well as some practical implications for the analysis and understanding of citizen satisfaction surveys for policy and management purposes.

But before discussing interpretations and practical implications, it is important to acknowledge a few methodological limitations. These data represent New York City, an unusually large, dense and culturally diverse city compared to most other US cities

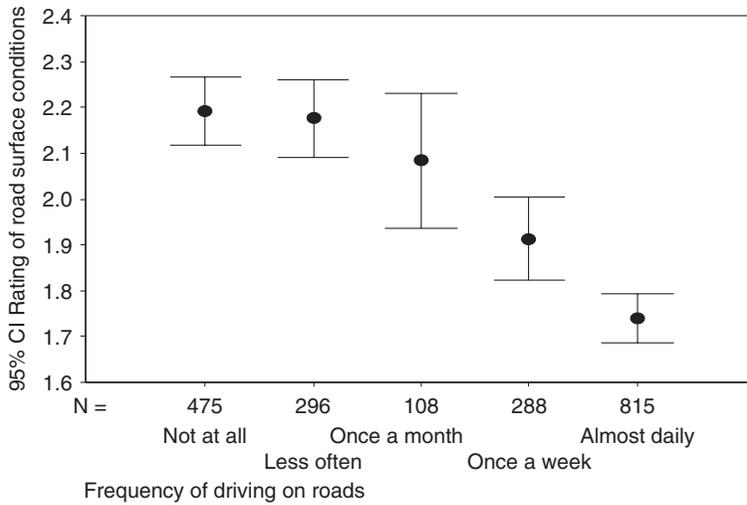


FIGURE 5 Road use and perceived performance

TABLE 2 Regression coefficients

	Perceived performance				
	Buses	Subways	Parks	Libraries	Roads
Constant	0.5029***	0.4037***	0.4777***	0.6436***	0.3987***
USE	0.3627***	0.5517***	0.3891***	0.0984	-0.0100
USE squared	-0.3110***	-0.4369***	-0.2204**	0.0035	-0.1431***
R-square	0.0060***	0.0070***	0.0110***	0.0130***	0.0618***

*p < .10. **p < .05. ***p < .01.

(although it is perhaps similar in these respects to some of the large European cities, such as London, Paris, Rome, and Madrid). Nevertheless, the non-linear pattern uncovered in our empirical results should be tested by future analyses of citizen survey data from other cities. In addition, it would be helpful to replicate this kind of analysis using more interval-like measures of both public service use and perceived performance (for example, by designing questionnaires with more precise service use questions and with 1–7 or 1–10 performance rating scales). Finally, alternative and perhaps more sophisticated regression techniques exist for fitting a non-linear model, such as Box-Cox regression (Greene 1998). Still, these New York City findings using ordinal measures and a basic polynomial model provide a useful initial indication of the existence of a non-linear relationship between use and perceived performance.

Turning to substantive interpretation, the non-linear form of the use-satisfaction relationship in our analysis could perhaps reflect the fact that public transportation, infrastructure (roads, sidewalks), and similar public services are local monopolies that people depend on in their daily lives. Frequent users dependent on these services will inevitably experience service shortcomings more often, if for no other reason than the fact that they use the services more often. For example, if a citizen is dependent on a bus

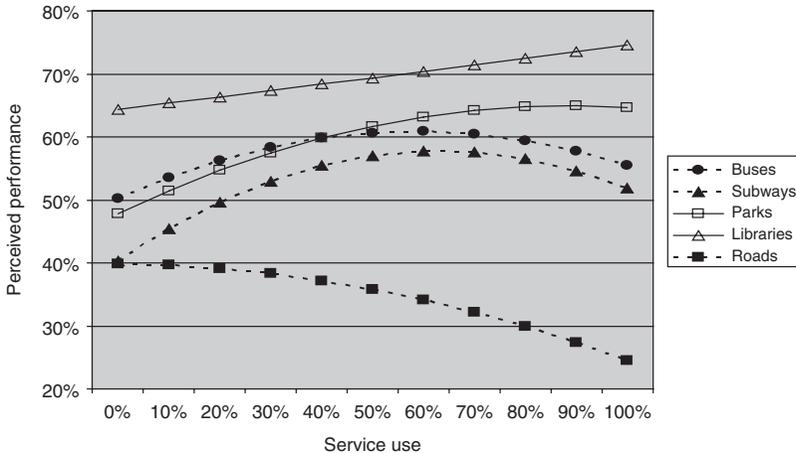


FIGURE 6 Regression lines (from coefficients in table 2)

line to get them to their job or school every day – and they have no ready alternatives – delays or over-crowding may become especially salient and frustrating. Indeed, previous research suggests that having little choice in using a service negatively influences citizen satisfaction (Brown 2007, p. 561). This could explain why our analysis finds that the slope tends to turn negative as public service use reaches higher or more intense levels. It should also be noted that high use of itself may well degrade the quality of the service (such as when heavy traffic makes travelling on the roads slower and more dangerous).

In contrast, irregular or infrequent users may be less dependent on these same public services, using them only to the extent they are pleasant or convenient. In this way, use frequency itself can become a consequence of performance perceptions or satisfaction. For this group of less frequent users, therefore, the relationship between use and satisfaction is direct and linear – as, indeed, it appears to be in the low-use range of our data. It could also be that infrequent users are citizens of higher socioeconomic status with more resources to obtain private substitute services, for example, taking taxis instead of riding buses. Again, these citizens would only use the public service to the extent it compared favourably with the private substitute (for example, when heavy traffic makes riding a subway preferable to taking a taxi).

But there appears to be a point – which seems to vary by the type of service – where the line changes from the positive slope characteristic of infrequent users to the negative slope characteristic of the most frequent users. This tipping point, as it were, is an interesting finding and worth further theoretical speculation as well as empirical investigation.

Public services that provide amenities or leisure activities (such as libraries), and not functional necessities (such as roads), may never reach such a tipping point, because it seems all or most citizens base their use of these services primarily on their performance perceptions – their satisfaction. In this way, they are like the infrequent users of other public services. In other words, citizens use leisure services more if they perceive good performance, and use them less if they are dissatisfied. This would explain the more direct, positive linear relationship we found in our analysis of libraries – regardless of use frequency. We might expect to see a similar linear pattern for museums, zoos, concerts,

or other such cultural or leisure services provided by government, but of course this is a prediction that only future empirical studies can confirm.

Parks in addition can be seen as an amenity or leisure service, and indeed in our analysis the use-satisfaction relationship appears fairly linear for parks as well – but there is still an eventual negative slope among frequent users. This can perhaps be explained by the fact that many people in New York City do very much depend on parks – for exercise, for kids to play, for dog walking, and so on. It again remains a matter for future empirical work, but we might predict that the relationship between frequency of use and satisfaction for parks in small, more suburban US cities might well turn out to follow more closely the leisure-services linear pattern than the necessity-services curvilinear pattern.

Our results have several potential implications for the management of local government services. To begin with, they call attention to the need to focus especially on the two extremes of the spectrum of public service use: those dissatisfied customers who use the service only a little (most likely because of their dissatisfaction) and the most frequent or regular users (who seem most sensitive to service quality shortcomings). Understanding what leads these two groups to become dissatisfied – reasons that might well be quite distinct within each group – could help inform an agency's performance improvement efforts.

In addition, our results suggest some possible unanticipated consequence of efforts to boost public service use. For example, public transportation officials often seek increased ridership, but they may need to be alert to unanticipated declines in service satisfaction. Interestingly, our results imply that much depends on where the gains in ridership will come from. If gains come from the low end of the use range (getting taxi regulars to consider the advantages of riding subways), satisfaction scores could well increase; the gains would in this case most likely be coming from users attracted by better service. But if ridership gains come from growth in the population of frequent users, satisfaction may decline overall as more riders get over-exposed, as it were, to the inevitable imperfections in service delivery. Thus, to grow the base of frequent users, without suffering a loss in customer satisfaction, an agency may need to make extra service improvements. But these remain speculative implications at this point, pending further empirical investigation.

In conclusion, the results of our analysis indicate that both academic and applied researchers should think carefully before simply assuming a linear relationship between public service use and perceived performance. Indeed, it would seem advisable to always graph the data and look for the negative quadratic pattern reported here. More research is needed to verify this pattern in other contexts and with other public services. And both academic and applied researchers should investigate what processes lie behind this apparent pattern of rising and falling satisfaction with increased use of many public services. We have offered a few speculations here, but more in-depth studies – including qualitative research with user groups – would certainly provide a clearer picture. With a firmer understanding of the connection between use and perceived performance, guidelines can be developed and efforts better directed toward improving public services and increasing the overall satisfaction of citizens.

REFERENCES

- Ammons, D.N. 1995. 'Overcoming the Inadequacies of Performance Measurement in Local Government: the Case of Libraries and Leisure Services', *Public Administration Review*, 55, 1, 37–47.

- Bouckaert, G. and S. Van De Walle. 2003. 'Comparing Measures of Citizen Trust and User Satisfaction as Indicators of "Good Governance": Difficulties in Linking Trust and Satisfaction Indicators', *International Review of Administrative Sciences*, 69, 3, 329–43.
- Brewer, B. 2007. 'Citizen or Customer? Complaints Handling in the Public Sector', *International Review of Administrative Sciences*, 73, 4, 549–56.
- Brown, T. 2007. 'Coercion versus Choice: Citizen Evaluations of Public Service Quality across Methods of Consumption', *Public Administration Review*, 67, 3, 559–72.
- Chan, Y.-C.L. 2004. 'Performance Measurement and Adoption of Balanced Scorecards: A Survey of Municipal Governments in the USA and Canada', *International Journal of Public Sector Management*, 17, 3, 204–21.
- Cheurprakobkit, S. 2000. 'Police-Citizen Contact and Police Performance Attitudinal Differences between Hispanics and Non-Hispanics', *Journal of Criminal Justice*, 28, 4, 325–36.
- Christensen, T. and P. Lægveid. 2005. 'Trust in Government: The Relative Importance of Service Satisfaction, Political Factors, and Demography', *Public Performance & Management Review*, 28, 4, 487–511.
- DeCorla-Souza, P. 2007. 'High-Performance Highways', *Public Roads*, 70, 6, 2–9.
- Fielding, G.J. 1987. *Managing Public Transit Strategically: A Comprehensive Approach to Strengthening Service and Monitoring Performance*, Ann Arbor, MI: Jossey-Bass.
- Fountain, J. 1997. 'Are State and Local Governments Using Performance Measures?', *PA Times*, 20, 1, PM2, 8.
- Ford, M. and T. Hibbard. 2000. 'Choosing Transportation Investments in Oregon: What Role for the State's Acclaimed Benchmarks?', *Public Works Management & Policy*, 4, 3, 184–95.
- Gilmour, S. 2008. 'Why We Trust the Police: Police Governance and the Problem of Trust', *International Journal of Police Science & Management*, 10, 1, 51–64.
- Hatry, H.P., L.H. Blair, D.M. Fisk, et al. 1992. *How Effective Are Your Community Services?* (2nd edn). Washington, DC: The Urban Institute and International City/County Management Association.
- Jacobs, R. and M. Goddard. 2007. 'How Do Performance Indicators Add Up? An Examination of Composite Indicators in Public Services', *Public Money & Management*, 27, 2, 103–10.
- Johnsen, Å. 2005. 'What Does 25 Years of Experience Tell Us About the State of Performance Measurement in Public Policy and Management?', *Public Money & Management*, 25, 1, 9–17.
- Greene, W.H. 1998. *Econometric Analysis*, 3rd edn. Upper Saddle River, NJ: Prentice Hall.
- Hall, J.L. 2007. 'Implications of Success and Persistence for Public Sector Performance', *Public Organization Review*, 7, 3, 281–97.
- Ho, A. and P. Coates. 2004. 'Citizen-Initiated Performance Assessment: The Initial Iowa Experience', *Public Performance & Management Review*, 37, 3, 29–50.
- Kelly, J.M. and D. Swindell. 2002a. 'A Multiple-Indicator Approach to Municipal Service Evaluation: Correlating Performance Measurement and Citizen Satisfaction across Jurisdictions', *Public Administration Review*, 62, 5, 610–21.
- Kelly, J.M. and D. Swindell. 2002b. 'Service Quality Variation Across Urban Space: First Steps Toward a Model of Citizen Satisfaction', *Journal of Urban Affairs*, 24, 3, 271–88.
- Kelly, J.M. and D. Swindell. 2003. 'The Case for the Inexperienced User: Rethinking Filter Questions in Citizen Satisfaction Surveys', *American Review of Public Administration*, 33, 1, 91–108.
- Kelly, J.M. 2003. 'Citizen Satisfaction and Administrative Performance Measures: Is There Really a Link?', *Urban Affairs Review*, 38, 6, 855–66.
- Kopczynski, M. and M. Lombardo. 1999. 'Comparative Performance Measurement: Insights and Lessons Learned from a Consortium Effort', *Public Administration Review*, 59, 2, 124–34.
- Labovitz, S. 1967. 'Some Observations on Measurement and Statistics', *Social Forces*, 46, 2, 151–60.
- Labovitz, S. 1970. 'The Assignment of Numbers to Rank Order Categories', *American Sociological Review*, 35, 3, 515–24.
- McMahon, S.K. 2002. 'The Development of Quality of Life Indicators – A Case Study from the City of Bristol, UK', *Ecological Indicators*, 2, 1/2, 175–85.
- Miller, T.I. and M.A. Miller. 1991. 'Standards of Excellence: US Residents' Evaluations of Local Government Services', *Public Administration Review*, 51, 6, 503–13.
- Moore, A., J. Nolan and G.F. Segal. 2005. 'Putting Out the Trash: Measuring Municipal Service Efficiency in US Cities', *Urban Affairs Review*, 41, 2, 237–59.
- Muzzio, D. and G.G. Van Ryzin. 2000. *Satisfaction with New York City Services: Report to the New York City Council*. New York, NY: New York City Council.
- Muzzio, D. and G.G. Van Ryzin. 2001. *Satisfaction with New York City Services 2001: Report to the New York City Council*. New York, NY: New York City Council.
- Nolan, J.F., P.C. Ritchie and J.R. Rowcroft. 2002. 'Identifying and Measuring Public Policy Goals: ISTE and the US Bus Transit Industry', *Journal of Economic Behavior & Organization*, 48, 3, 291–304.
- Pina, V. and L. Torres. 2001. 'Analysis of the Efficiency of Local Government Services Delivery. An Application to Urban Public Transport', *Transportation Research*, 35, 10, 929–44.

- Poister, T.H. 1982. 'Developing Performance Indicators for the Pennsylvania Department of Transportation', *Public Productivity Review*, 6, 1/2, 51–77.
- Poister, T.H. and G.T. Henry. 1994. 'Citizen Ratings of Public and Private Service Quality: A Comparative Perspective', *Public Administration Review*, 54, 2, 155–60.
- Poister, T.H. and J.C. McDavid. 1978. 'Victims' Evaluation of Police Performance', *Journal of Criminal Justice*, 6, 2, 133–49.
- Stipak, B. 1979. 'Citizen Satisfaction with Urban Services: Potential Misuse as a Performance Indicator', *Public Administration Review*, 39, 1, 46–52.
- Stradling, S.G., J. Anable and M. Carreno. 2007. 'Performance, Importance and User Disgruntlement: A Six-Step Method for Measuring Satisfaction with Travel Modes', *Transportation Research*, 41, 1, 98–106.
- Swindell, D. and J.M. Kelly. 2000. 'Linking Citizen Satisfaction to Performance Measures: A Preliminary Evaluation', *Public Performance & Management Review*, 24, 1, 30–52.
- Taylor, J. 2006. 'Performance Measurement in Australian and Hong Kong Government Departments', *Public Performance & Management Review*, 29, 3, 334–57.
- Transportation Research Board Executive Committee. 1999. *A Handbook for Measuring Customer Satisfaction and Service Quality*. Washington, DC: National Academy Press.
- Van de Walle, S., S. Van Roosbroek and G. Bouckaert. 2008. 'Trust in the Public Sector: Is There any Evidence for a Long-Term Decline?', *International Review of Administrative Sciences*, 74, 1, 47–64.
- Van Ryzin, G.G. 2004a. 'Expectations, Performance, and Citizen Satisfaction with Urban Services', *Journal of Policy Analysis and Management*, 23, 3, 433–48.
- Van Ryzin, G.G. 2004b. 'The Measurement of Overall Citizen Satisfaction', *Public Performance & Management Review*, 27, 3, 9–28.
- Van Ryzin, G.G. 2006. 'Testing the Expectancy Disconfirmation Model of Citizen Satisfaction with Local Government', *Journal of Public Administration Research and Theory*, 16, 4, 599–611.
- Van Ryzin, G.G. 2007. 'Pieces of a Puzzle: Linking Government Performance, Citizen Satisfaction, and Trust', *Public Performance & Management Review*, 30, 4, 521–35.
- Webb, V.J. and C.M. Katz. 1997. 'Citizen Ratings of the Importance of Community Policing Activities', *International Journal of Police Strategy and Management*, 20, 1, 7–23.

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