Service Quality and Benchmarking the Performance of Municipal Services

How can local officials select benchmarking partners whose best practices have the most potential for applicability and success in improving service performance? This study suggests the process for selecting the most appropriate benchmarking partners and for making fair performance comparisons will be advanced if local officials initially address the issue of what level of input service quality level is desired or can be provided. Using data collected from a national survey, the study presents a framework for measuring service quality for municipal solid waste recycling programs. It examines the connection between input service quality and service outcomes and describes the results of analyses of the contextual factors and best practices that distinguish the top recycling performers and potential benchmarking partners in each service-quality class. The study suggests a model for how local officials can use this type of information to select an appropriate benchmarking partner. The study shows that a quality-of-service framework for municipal services can advance local decision making about what citizens and stakeholders expect and will support in terms of input service quality. It also can help local officials identify benchmarking partners that provide a service at the desired level of quality.

The search for better ways to produce program results is an enduring challenge for local officials. Managers of municipal recycling programs, for example, must balance citizens’ demands for more efficient services with state-mandated performance goals or targets—all while complying with a federal regulatory regime that governs much of the business of solid waste management. Benchmarking is one strategy that scholars have identified as having the potential to help local officials advance the performance of local services (Cohen and Eimicke 1998; Keehley et al. 1997; Hatry 1999; Ammons 2001; Coe 1999). Benchmarking is the systematic identification of the best practices employed by other jurisdictions which lead to superior performance. In this approach to benchmarking, public officials compare their jurisdiction’s service-performance statistics to those of an appropriate municipal counterpart, with the goal of understanding how they can close the gap between where they are and where they want to be (Ammons 1999; Ammons, Coe, and Lombardo 2001). The idea is to adapt particular policies and practices used by top-performing jurisdictions to realize a comparable level of performance.

Many of the challenges inherent in benchmarking local government services have been well documented. At the outset, it is important to have a “proper mentality for benchmarking” (Ammons 1999, 105). Recognizing the potential and need for service improvement is no less important than surmounting employees’ fears that benchmarking is just another club used to beat up on management’s proficiency or workers’ diligence (Ammons 1999). Looming still larger on the horizon of the benchmarking process are challenges that have the potential to be “poison pills” for interjurisdictional performance comparisons if they are not resolved satisfactorily. These include reaching agreement on exactly what to measure and how to measure it, and then obtaining reliable, comparable data and information on those measures from an appropriate benchmarking partner to facilitate fair performance comparisons (Ammons, Coe, and Lombardo 2001; Rivenbark 2000a; Kopczynski and Lombardo 1999; Morely, Bryant, David H. Folz
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Several recent local government performance comparison projects have shown significant promise in crafting strategies to deal with these challenges (Kopczynski and Lombardo 1999; Ammons, Coe, and Lombardo 2001). In light of these advances, Ammons, Coe, and Lombardo (2001, 100) are clearly on target when they observe that “gone are the days when local governments could proclaim their uniqueness and comfortably declare their immunity from comparison to other units.”

In practice, however, scholars and practitioners concur that it is difficult to make performance comparisons among jurisdictions that vary in the nature, scope, and quality of their services and to find benchmarking partners that employ and collect data on performance measures that are truly comparable, reliable, and useful for making decisions about service improvements (Ammons, Coe, and Lombardo 2001; de Lancer Julnes and Holzer 2001; Rivenbark 2000b). In fact, a recent survey of municipal managers indicated the most prevalent concern in measuring performance—cited by 80 percent of respondents—concerned the “difficulty in measuring the quality of municipal programs and services” (Poister and Streib 1999, 331). Resolving this quality-of-service enigma is especially important to finding appropriate benchmarking partners and for extracting the maximum benefit from the partner’s experience with best practices.

This research suggests a process for using information about municipal service quality in a benchmarking project and shows why it may facilitate a community’s selection of an appropriate benchmarking partner. As an illustration, this research suggests a framework for measuring the different levels of service quality that characterize municipal solid waste recycling programs. It then examines how such a framework can help communities identify the most appropriate benchmarking partners. The study presents a model showing the connection between the level of recycling service quality provided and the contextual factors and best practices that affect two recycling performance outcomes (citizen participation and waste-stream diversion). For each of the three main classes of service quality, the study identifies factors that predict higher recycling performance. Finally, the study shows how information from a service-quality framework can be used in a benchmarking project; it concludes by reviewing the implications of this approach for selecting appropriate partners for benchmarking municipal services.

**Why Consider Service Quality First?**

Although the literature has recognized the importance of the quality-of-service dimension to making fair and truly comparable performance assessments for some time (Whooley and Hatry 1992; Whooley and Newcomer 1989; Halachmi 1999), there is a case to be made that public administration scholars need to focus even more attention on measuring the quality of public services and determining how managers can use this information to systematically select appropriate partners in a benchmarking process. There are several reasons it may be prudent for local governments to begin a benchmarking quest by considering the initial level of service quality that citizens prefer and are willing to support financially instead of first screening for potential benchmarking partners using various performance criteria. This study investigates two possible questions in particular: (1) whether a higher level of service quality leads to better recycling outcomes generally; and (2) whether there are important policy and community contextual differences that distinguish top-performing jurisdictions in the different quality-of-service classifications.

First, I hypothesize that cities that provide a qualitatively higher level of recycling service will attain higher scores on measures of recycling outcomes. Secondly, I hypothesize that among the top tier of performers (the highest 20 percent) in each service-quality class, no significant differences will be observed in mean recycling outcomes. In other words, there may be a positive relationship between the level of service quality and recycling outcomes, but it is possible for cities that provide different levels of input service quality to achieve comparable, superlative performance on outcomes measures. In this event, it is important for local decision makers to know which recycling policies, practices, and community contextual features distinguish higher-performing cities in each service-quality class.

The idea here is straightforward: Gathering data on the service outcome measures for cities will identify the top performers, but this list is likely to include many communities that may not make appropriate benchmarking partners. Higher-performing cities may have similar levels of citizen participation and diversion and comparable unit costs that mask important differences in total program cost, the level of investment required in a particular resource and equipment configuration, citizens’ willingness to engage in certain coproduction activities (such as taking recyclables to a drop-off location), and a number of other policies and community contextual features. By considering first what citizens want, need, or prefer and what they are willing to support financially or through coproduction activities, local officials can focus on high performers at the service-quality level that best matches the community’s preferences, aspirations, and circumstances. The assertion examined in this article is that suitable benchmarking partners may be found among cities with qualitatively different levels of service which correspond to important local preferences and financial circumstances. The implicit value
of this approach is that it may facilitate identification of the most appropriate benchmarking partner candidates. If this assertion is supported, a benchmarking process would need to address several service-quality issues. First, local officials should ascertain the existing level of service quality and determine whether citizens, customers, and relevant stakeholders are satisfied with or prefer a qualitatively different level of service. This is the stage where opinion surveys, for example, might be very helpful and informative, especially for a coproduced service such as recycling (Berman 1998; Folz 1999a, 1999b; De Young 1986; Vining and Ebreo 1990; Brudney 1990; Feiock and West 1996). More citizens are likely to have opinions and ideas about what kind and level of community services they will use, want, and support financially than they are to offer specific feedback that is managerially helpful in making decisions about how to improve the outcome quality or effectiveness of a service (Berman 1998; Poister and Henry 1994; Simonsen and Robbins 2000). If local officials conclude there is community support for changing or enhancing the quality of a particular service, the search for a benchmarking partner should focus on candidates that provide the service being benchmarked at the aspired level of quality. Otherwise, the search may focus on communities that provide a level of service quality comparable to the level presently offered.

The crux of this initial stage in the quality-of-service decision process is determining whether the community wants to sustain or change an existing level of service quality. In either case, the community’s challenge is to find benchmarking partners that provide the service at the desired level of quality and to identify the best practices that explain why that partner is able to provide the service at a higher level of efficiency and effectiveness. The initial decision about the desired level of service-quality provision is important because it offers a strategy for choosing the most appropriate benchmarking partner(s), whose best practices are likely to be most applicable, relevant, and useful for local officials. Consequently, the prospects for actually applying the knowledge gained from the benchmarking process to change practice should be greater (Rivenbark 2000b). By explicitly addressing the issue of service quality at the outset of the benchmarking process, local officials may be able to deflect skepticism about making unfair performance comparisons and sustain employee buy-in and support for the benchmarking enterprise.

In this study, service quality has two related but distinct dimensions which, for the sake of clarity, are labeled input and output quality. As they are used here, input quality refers to the bundle of service characteristics and features that represent a particular level of service, distinguished by the policies and service infrastructure investment that enable a community to offer a more frequent, extensive, or convenient service for citizens. Output quality refers to the actual service outcomes that citizens experience or to measures of the timeliness, reliability, thoroughness, efficiency, and effectiveness of the service.

The implicit assumption of the approach to selecting benchmarking partners examined here is that it may be possible to improve the efficiency and effectiveness of a service without investing significantly more resources to provide a qualitatively higher service level—although such a decision may be reached in the initial analysis of local service-quality preferences. Addressing the service-quality issue a priori, of course, requires a framework for assessing or classifying the quality range of different municipal services. Following Poister and Streib’s (1999) finding that measuring the quality of municipal services and programs is one of the most common difficulties in performance measurement, it seems appropriate and timely for scholars to address this critical concern by suggesting frameworks for classifying the quality of municipal services, thus facilitating performance comparisons for whatever measures of efficiency and outcome effectiveness are agreed upon for a service.

In addition to addressing the service-quality issue, Kopczynski and Lombardo (1999) assert that good performance comparisons should include “exploratory information” that can be used to explain low or high service performance. In their incisive description of the International City/County Management Association’s large city/county consortium project, they document the effort to include at least a limited set of external factors (such as demographic characteristics), as well as information about the local policies and best practices that participants believed were linked to differences in performance effectiveness (Kopczynski and Lombardo 1999).

In the field of solid waste recycling, scholars have long been concerned with understanding the importance of external “community contextual factors” and internal administrative practices to determine the success of recycling services (Folz and Hazlett 1991; Feiock and West 1996). After all, if a community’s high performance in providing a service at a particular level of quality can be attributed to factors that are largely beyond the control of local officials, this would be of interest to managers interested in making fair performance comparisons. This is not just an academic question. As Kopczynski and Lombardo (1999) suggest, expensive mistakes can be made if a community adopts policies that appear to be successful elsewhere, only to discover that other characteristics or features of the community may have been responsible for its high level of performance. It is imperative that communities undertaking a benchmarking process are reasonably sure that a particular jurisdiction’s performance success is dependent on controllable best practices, and not on particular features.
or contexts that are beyond managerial control. Following these prescriptions, this research suggests a quality-of-service framework, examines the relationship between input service quality and service outcomes, and then identifies factors that distinguish higher-performing recycling programs in each quality class.

**Methodology**

**Data**

The data for this study are derived from a 1997 national mail survey of municipal solid waste managers and recycling coordinators. A total of 5,044 cities were identified as operating solid waste recycling programs during 1996. From this population, a sample of 2,096 cities was selected in such a way as to obtain a random sample for the states, stratified by population size. The recycling coordinators in these 2,096 cities from 44 states represented 41.6 percent of all cities with recycling programs. The initial mailing in the spring of 1997 and three follow-up contacts yielded responses from 1,025 recycling coordinators, for a return rate of 48.9 percent. These responses represented over 20 percent of all U.S. cities with recycling programs. Among the responding cities, 794 (78.5 percent) offered curbside collection of recyclables and 218 (21.5 percent) provided one or more sites for citizens to drop off recycling materials. Citizen participation was mandated by state law or local ordinance in 330 communities (32 percent) and was voluntary in 682 cities (68 percent).

**Variable Operationalizations**

Based on the information provided by recycling coordinators, a quality-level index for recycling service was devised which has two major dimensions: recycling convenience and the scope of materials targeted for inclusion in the program. Recycling convenience was measured by four indicators: collection frequency, the materials-commingling policy, collection-day schedule, and point of collection. Collection frequency was measured as either none, monthly, biweekly, or weekly. Cities were ordered first in groups based on collection frequency. Cities with more frequent collection received a higher score because more frequent collection was considered to be more convenient for citizens. Materials commingling distinguishes between cities that require materials to be separated (or segregated) into different bins or bags and those that allow recyclable materials of different types to be placed in the same container. Cities that allowed commingling received a higher score on this dichotomous measure because this practice imposes less of a burden on residents, and therefore is considered to be more convenient. Point of collection refers to the location(s) where recyclable materials are collected. This is a dichotomous measure coded 0 for providing only drop-off locations, or 1 if curbside collection was provided. The latter was considered to be more convenient than taking materials to a drop-off location. Collection schedule applied to cities offering curbside collection and indicates whether recyclable materials are collected on the same day or a different day as solid waste. The former is considered to be more convenient and, accordingly, received a higher score.

The scope of targeted materials was defined as either basic (the program includes one or more of glass, aluminum, and newspaper) or expanded (the basic three materials plus plastics, mixed paper, cardboard, yard trimmings, and other materials). Cities with an expanded scope of materials received a higher score. These measures for convenience and scope of targeted materials enabled the computation of a service-quality index, which identified 24 levels of service quality.

To facilitate a more practical classification scheme, cluster analysis was used to classify cases (cities) into three relatively homogenous groups. The large and significant F ratio suggested the quality-of-service score was useful for separating and identifying cluster membership. The main feature that distinguished basic-level cities was that they did not offer curbside collection. Mid-level cities offered curbside collection, but less frequently than weekly. High-level cities offered weekly curbside collection of recyclables.

The two recycling outcome measures used in this research are citizen participation and diversion. The measure of citizen participation was derived from the recycling coordinators’ response to the question, “About what percentage of eligible households actually participated in the recycling program?” The measure of diversion represents the recycling coordinators’ response to the question, “In your estimation, what percentage of the total municipal solid waste stream was diverted from disposal by recycling the materials in your program (including any diversion of yard trimmings)?”

Based on previously cited research, several variables were employed in both the path model that illustrates the connections between service quality, recycling participation, and diversion, and the regression analyses of participation and diversion for cities in each of the three service-quality groups. These variables included selected community contextual characteristics and recycling policies. The contextual feature “popularity of recycling among local residents” is a dichotomous measure based on responses to a survey question that asked coordinators to rate the level of citizen support for the city’s recycling program. The responses “very weak,” “weak,” or “moderate” were coded 0; “strong” or “very strong” responses were coded 1. Government structure was coded 0 if the city had a form other than council-manager, and 1 if the city had a
council-manager government. The city’s mean household income and population density (people per square mile) were obtained from the latest U.S. Census Bureau data available at the time of the survey.

The measures for recycling policies were derived from the recycling coordinators’ survey responses. Cities with voluntary recycling participation were coded 0; those that mandated participation were coded 1. The same coding logic applied to a variable-fee pricing policy and the use of co-collection vehicles for solid wastes and recyclables. The number of different materials included in the recycling program was the total number of different types of materials targeted for recycling.

A Service-Quality Framework for Recycling

Service quality is one of those slippery concepts in public administration. Attempts to define and measure it to everyone’s complete satisfaction are analogous to the challenge of herding cats. Nevertheless, our literature offers an array of reflections about its meaning and is replete with pleas for more attention to the quality-of-service dimension in public services (Hatry et al. 1977; Adam, Herschauer, and Ruch 1981; Hatry 1978; Epstein 1992; Poister and Harris 2000). A number of scholars have offered specific descriptions of and indicators for the quality of various public services (Hatry et al. 1992; Halachmi 1999; Hyde 1995; Ammons 1995; Poister and Henry 1994; Ammons 2001).

One apparent long-standing problem is the failure to reach a consensus on the meaning of service quality and how best to measure it for different services. At the root is the conceptual and intuitive difficulty of distinguishing between the nature, character, level, or scope of a service being provided or purchased—indicated by factors such as its type or level of delivery, frequency, intensity, coverage, or convenience—and the qualitative characteristics of service outputs or how citizens and users perceive or experience the service. The challenges are analogous to distinguishing between the input and output quality of a commuter train service. Rail transport may provide a level of service that uses the fastest locomotives, offers a convenient schedule with enough cars to comfortably accommodate expected passenger demands, and has facilities designed to accommodate special needs passengers. By contrast, the same service can be described in terms of how users experience or perceive the quality of the service. This may entail perceptions of how efficiently and effectively the service satisfies needs or concerns about reliability, dependability, accessibility, comfort, and safety.

The former view of service quality is driven by input or resource investment decisions, whereas the latter are features of the experience with the service. It is logical to expect some connection between the quality of service inputs and outputs. Both are important dimensions that affect how citizens think about service quality. For the purposes of benchmarking, however, it may be useful to make a distinction between them. For example, a community may be able to afford to “buy” a certain level of quality in its workforce of public school teachers by offering compensation packages, workplace conditions, and facilities that attract individuals with advanced degrees, extensive experience, and distinguished teaching credentials. That is a choice about providing a level of service quality that some communities enjoy. But would a financially strapped community with a different type of student population and with different community needs or resources really be able to adapt many of the first community’s best practices? Would the inability to afford this level of input service quality necessarily mean that a less wealthy community could not hope to meet or exceed the performance of the community with a qualitatively different level or array of service inputs?

The argument here is that public administration scholars and practitioners should revisit their analyses of urban services to devise criteria that can distinguish different qualitative levels of service. This is just as important as continuing the effort to capture the qualitative features of outputs with better measures of these service characteristics. The purpose of making the distinction in the present context is to facilitate the process of finding an appropriate benchmarking partner that will offer the most potential for adaptation of best practices to boost performance outcomes. While a case can be made that managers in smaller cities with limited budgets might learn something from a premier service-quality provider whose service production rates among the highest-performing jurisdictions on relevant “objective” outcome indicators, the argument examined here is that the chances of discovering best practices with the most applicability are better if that benchmarking partner is a high performer that offers a service-quality level that is comparable to or desired to be attained by the initiating benchmarking government.

This quality-of-service framework for recycling programs suggests there are at least two important dimensions of input service quality: recycling convenience and scope of targeted materials. Table 1 illustrates the application of these measures of input service quality to the population of cities with recycling programs.

It is well accepted in the coproduction literature that citizens are more likely to participate in an activity if it is convenient for them to do so (Feiock and West 1996; De Young 1993; Vining and Ebreo 1990; Folz 1991; Brudney and England 1983). For recycling, the most convenient service minimizes the “costs” of participation in terms of
time, effort, or storage costs. Informed by the findings of this previous research, communities that have the most convenient recycling service are those that offer weekly, curbside collection of recyclables on the same day as the collection of solid wastes and permit citizens to commingle materials instead of separating these materials (such as glass, aluminum, plastics, and newspapers) into separate bins. Communities that include more types of materials in their recycling programs offer a qualitatively different, more complex type of program that requires a more extensive collection, handling, and marketing effort. Cities that have expanded lists of target materials also impose fewer demands on residents to discriminate among materials that are locally recyclable. Of course, the most convenient and inclusive type of recycling program (one with a qualitatively higher service level) necessitates a more extensive service infrastructure in terms of both equipment and personnel compared to an unstaffed drop-off program that targets only a few materials (one with a qualitatively lower level of service).

Table 1 shows it is possible to differentiate several levels of service quality using indicators for recycling convenience and scope of service. For analytical purposes, cluster analysis was used to identify three groups of cities with comparable levels of service quality. These are described as quality-of-service classes. Basic-level cities offered only some type of drop-off recycling; mid-level cities provided curbside collection, but less frequently than weekly; high-level cities, the most numerous, collected recyclables at the curb at least weekly.

**Service Quality and Performance**

The service-quality classification was used to compare cities on two recycling outcome measures (citizen participation and diversion), a measure of efficiency (mean net cost per ton), and workload (population size). The group means for citizen participation and diversion are reported in Table 2 for all cities and for cities that achieved outcomes in the top 20 percent. These top performers are considered to be the most logical potential benchmarking partners.

Analysis of the data for all cities shows there is a statistically significant difference (at the 0.05 level) in the means for both citizen participation and diversion among the three quality-of-service classifications. The higher the quality-of-service class, the higher the mean participation and diversion levels; however, for the top 20 percent of performers in each class, there was no statistically significant

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**Table 1 Framework for Service-Quality Levels of Recycling Services**

<table>
<thead>
<tr>
<th>Quality-of-service class</th>
<th>Service-quality level</th>
<th>Collection frequency</th>
<th>Commingling of materials (No=not allowed; yes=allowed)</th>
<th>Collection schedule</th>
<th>Point of collection</th>
<th>Scope of targeted materials</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic level</td>
<td>1</td>
<td>n.a.</td>
<td>Depends on local policy</td>
<td>n.a.</td>
<td>Drop-off (unstaffed)</td>
<td>Basic</td>
<td>25</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>n.a.</td>
<td>Depends on local policy</td>
<td>n.a.</td>
<td>Drop-off (unstaffed)</td>
<td>Expanded</td>
<td>20</td>
<td>3.0</td>
</tr>
<tr>
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<td>3</td>
<td>n.a.</td>
<td>Depends on local policy</td>
<td>n.a.</td>
<td>Drop-off (staffed)</td>
<td>Basic</td>
<td>27</td>
<td>4.0</td>
</tr>
<tr>
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<td>4</td>
<td>n.a.</td>
<td>Depends on local policy</td>
<td>n.a.</td>
<td>Drop-off (staffed)</td>
<td>Expanded</td>
<td>44</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>116</td>
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<td>Mid-level</td>
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<td>Curb</td>
<td>Basic</td>
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<td>.1</td>
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<tr>
<td></td>
<td>6</td>
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<td>Curb</td>
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<td>7</td>
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<td>Same day</td>
<td>Curb</td>
<td>Basic</td>
<td>2</td>
<td>.3</td>
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<td>Same day</td>
<td>Curb</td>
<td>Expended</td>
<td>4</td>
<td>.6</td>
</tr>
<tr>
<td></td>
<td>9</td>
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<td>No</td>
<td>Different</td>
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<td>Basic</td>
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<td>Curb</td>
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<td>.6</td>
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<td>1.6</td>
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</tr>
<tr>
<td></td>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>668</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The value of using a quality-of-service framework is also apparent when comparing cities in each quality-of-service class on efficiency and workload indicators. The means in table 3 show that larger cities were more likely to offer the higher, more expensive level of service. Mean tons recycled, mean total program cost, and mean net cost per ton also increased as quality level increased. The cities among the top tier of performers (on participation and diversion) in each quality level recycled a significantly larger mean number of tons and incurred a generally higher mean program cost, but also achieved a lower (and thus more efficient) mean net cost per ton.

The top-tier performers in the high-level quality class achieved the highest level of efficiency, as indicated by the mean net cost per ton of $51.35. Clearly, the decision to provide a service at a higher level of service quality has implications for service performance, cost, and efficiency.

These findings require further specification of the relationship between service quality and recycling performance.

A Model of Service Quality and Recycling Performance

Following previous research (Feiock and West 1996; Folz 1991; Folz and Giles 2002) suggesting that citizen participation is the touchstone of success for collectively coproduced services, and the finding in this study that quality of service appears to be related to the level of citizen participation, path analysis was used to estimate the magnitude and significance of hypothesized relationships. The model in figure 1 shows only the statistically significant path coefficients (standardized coefficients) for the variables that affected recycling quality level, participation, and diversion. It was hypothesized that higher levels of service quality (measured by the service-quality index) result in higher levels of participation, in turn increasing the level of diversion. The effects are estimated for factors in two groups of variables (recycling policies and community contextual features).

The community contextual features included in the model were the recycling program’s popularity among residents, population density, mean household income, and form of government. Following Feiock and West (1996), who found that public support for recycling affects policy success, it was hypothesized that cities in which recycling is more popular will have a higher level of service quality and participation. These authors also suggested that recycling is likely to be more popular among higher-income households. This proposition also is tested. Based on previous research by Folz and Hazlett (1991), it was hypothesized that cities with a higher population density and

<table>
<thead>
<tr>
<th>Service-quality class</th>
<th>Citizen participation</th>
<th>Recycling diversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>All</td>
<td>N</td>
</tr>
<tr>
<td>Basic level</td>
<td>36.5</td>
<td>88</td>
</tr>
<tr>
<td>Mid-level</td>
<td>67.8</td>
<td>130</td>
</tr>
<tr>
<td>High level</td>
<td>69.7</td>
<td>389</td>
</tr>
<tr>
<td>Means/total</td>
<td>64.5</td>
<td>607</td>
</tr>
</tbody>
</table>

Table 2 Service-Quality Class and Outcome Indicators for all Cities and Top Performers

<table>
<thead>
<tr>
<th>Service-quality class</th>
<th>Mean tons recycled</th>
<th>Mean program cost (dollars)</th>
<th>Mean net cost per ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>All</td>
<td>N</td>
<td>Top tier</td>
</tr>
<tr>
<td>Basic level</td>
<td>1,144</td>
<td>78</td>
<td>1,501</td>
</tr>
<tr>
<td>Mid-level</td>
<td>4,219</td>
<td>113</td>
<td>4,121</td>
</tr>
<tr>
<td>High level</td>
<td>5,356</td>
<td>338</td>
<td>7,772</td>
</tr>
<tr>
<td>Means/total</td>
<td>4,492</td>
<td>529</td>
<td>6,274</td>
</tr>
</tbody>
</table>
Recycling policies

Mandatory participation

Variable fee

Use co-collection trucks

Recycling Diversion

Recycling Participation

Service-quality level

Population density

Recycling popularity

Mean household income

Community contextual features

Number of target materials

Recycling policies

Figure 1 Path Model for Service Quality, Participation and Diversion, and the Impact of Recycling Policies and Community Contextual Features

Recycling participation was the most important variable in explaining higher diversion, but several other variables also had significant effects. Cities that had a higher population density, targeted more materials, and used co-collection trucks for solid waste and recyclables had higher levels of recycling diversion. This model clarifies the impact of service quality on participation and its indirect effect on diversion, yet service quality is just one of several policies and community contextual features that may affect recycling performance. The next section specifies the factors that helped to explain recycling performance in each of three quality-of-service classes.

Best Practices, Contextual Features, and Recycling Diversion

Kopczynski and Lombardo (1999) note that it is important to attempt to link high performance with specific practices or other factors related to the characteristics of the community. Regression analysis was used to identify the relative importance of local policies and contextual features in explaining differences in recycling participation and diversion. In the context of selecting a potential partner for benchmarking, this type of information is useful for identifying the particular features of a community that affect performance differences, as well as the policies that may number among the best practices used by cities at a particular level of service quality. As Feiock and West (1996, 1068) explain, the “distinction between programmatic and contextual factors … may indeed be useful for isolating the potential of administrative design considerations to shape program success.”

The models of recycling participation and diversion presented in table 4 identify the types of recycling policies and community contextual features that contributed to higher recycling performance.

All of the cities in each quality class (not just the top 20 percent in each class) were included in the regression models. The cities in the basic and mid-level quality classes that achieved a higher level of citizen participation enjoyed higher levels of support for recycling by residents and mandated citizen participation. The cities in both of these classes which achieved a higher level of diversion targeted a larger number of materials and attained a higher level of participation in recycling.

Among all of the cities offering a high-quality level of recycling service, the municipalities that achieved higher levels of recycling participation were those that mandated participation, imposed variable-fee pricing (in which citi-
zens’ cost for solid waste service varied according to how much they disposed), and targeted a larger number of materials. Higher recycling diversion was attained by cities that targeted a larger number of materials, used co-collection trucks for recycling and solid waste, had a higher population density, and attained a higher level of recycling participation.

These models of recycling participation and diversion for cities in each of the three quality-of-service classes suggest it is important for managers to exercise care in selecting an appropriate benchmarking partner, especially as it concerns the strength of popular support for recycling among local residents. Understanding the extent to which citizens are willing to participate in the various forms of recycling, such as drop-off recycling, and to support a more expensive level of recycling service, such as curbside collection, are important community contextual features. These findings also suggest it would be prudent for local officials to assess the markets for particular recyclable materials before deciding to emulate high performers that targeted a larger number of materials. The findings also indicate that recycling policies subject to local control affect performance. These include mandating participation. Regardless of service-quality class, cities that adopted this policy achieved higher recycling participation. Among cities in the high-quality service class, those that adopted variable-fee pricing for solid wastes also achieved higher recycling participation.

**Selecting a Benchmarking Partner**

Cohen and Eimicke (1998) explain that quality is a key variable that should be measured in any public-sector benchmarking process. They recognize that “picking the appropriate standard of comparison is complicated” (73). This research suggests that managers should explicitly consider the level of quality they wish to sustain or attain in providing a service, and they should use this as one of the key selection criteria for choosing a comparable benchmarking partner whose best practices have the most potential for adaptation to realize performance improvement. The service-quality framework developed for recycling programs offers one way to measure differences in service quality, which may affect the choice about the most appropriate benchmarking partners whose performance a community wishes to emulate. Although there is clear evidence that higher service quality is related to higher recycling performance, analyses using this framework suggest it is possible to achieve a high level of performance at any particular level of service quality. Perhaps this is true of other services, too. If so, communities that may not have the popular support for or fiscal resources to provide the highest level of service quality may still find suitable benchmarking partners within their own cost stratum.

The analyses of recycling performance suggest that managers should examine particular community contextual features that may affect the outcomes achieved by a high-performing service or program. Even if a perfect match on these contextual features is impossible, knowledge of the particular features that affect performance at least provides an empirical basis for understanding why adoption of particular best practices for a service may not result in equivalent performance gains. This advances the objective of making fair performance comparisons with a benchmarking partner.
Figure 2 is a simplified illustration of how a service-quality-level framework, such as the one suggested for recycling, may be used in the sequence of decisions about selecting a role model for a benchmarking project. As the diagram suggests, a quality-of-service framework can help to distinguish the various levels of service quality, as these are shaped by local support and fiscal capacity.

Once there is consensus about the level of service quality that citizens and local officials prefer and will support, and which measures will be used to assess and compare service performance, the search for benchmarking partners can focus on an analysis of the top performers in the level of service quality desired to be attained or sustained by the community.

The insights reported by Kopczynski and Lombardo (1999) and the results of the regression analyses reported here suggest that managers need to consider both the community contextual features and the best practices that characterize top performers in the targeted quality-of-service class. For a recycling program, the “best fit” benchmarking partner is the community that offers the best match in terms of popular support for recycling among local residents. Then, local officials can identify the actions needed to achieve the desired service level and the best practices that appear to have potential for closing a performance gap. Implementation of those actions is followed by monitoring progress in meeting both service-quality objectives and performance benchmarks.

**Summary and Conclusion**

Benchmarking, as a tool that can help communities improve service performance, is in a nascent stage of both theoretical development and practical application in the public sector. This research suggests that public administration scholars can advance the benchmarking process—particularly, the search for best practice partners—by devising frameworks that enable local officials to distinguish the different levels of quality in municipal service provision. Service quality is a concept that has implications for the input features of a service that relate to the fiscal, human, and material, as well as to differences in its frequency, convenience, timeliness, and scope. Communities vary in their financial capacities, policy priorities, as well as local popular needs, preferences and supports. By devising quality classifications for municipal services that recognize these distinctions, communities will be able to make more explicit choices about a level of service quality that best meets local service needs and stakeholder preferences, as well as resource and political constraints. If citizen buy-in for a particular service level is attained, then perhaps one source of disconnect with citizen perceptions of the quality of service they experience can be eliminated. By considering issues related to both the level of service provided and citizens’ perceptions of their experiences with the service, local officials may gain more insight about what citizens and stakeholders really want, expect, and will support, and may more easily discern how to change the service to achieve a higher perceived level of performance.
References


