Design Features of Public Agencies and Their Relationship with End User Satisfaction

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Abstract

This study relates end-user satisfaction to design features of public agencies. The study seeks to move from the descriptive literature of the past century on reinventing government and other types of reform to an empirically grounded survey methodology that examines end-user satisfaction across varied levels of government. Based on a sample of 2,816 end-users of 17 public-sector organizations, the study tests for associations between organizational performance features and service satisfaction. The findings correlate user satisfaction with three design characteristics of public agencies: agency dependence on user satisfaction for future funding; a clearly identifiable end-user focus by the agency; and the ability of the user to exercise choice in her or his future use of the agency’s services. These findings provide a methodology for assessment of end user preferences that connect agency performance with public-agency design.
Purpose

This study relates design features of public agencies to end-user satisfaction. The research reviews normative premises that pertain to the reform of public organizations, their structural implications, and the role end-user satisfaction may play in the assessment of organizational effectiveness. Through empirical measurement, the research explores the relationship between the structure of organization and end user satisfaction with the public services.

Introduction

Connecting end-user preferences through surveys to public agency designs and processes has been an enduring challenge, in that “…public administration has struggled for more than 30 years with how to bring the public citizens and citizen groups into the administrative process” (Thomas, 1999, p. 83). Empirical research needs to probe the complexities involved in the public’s relationship with government agencies, including effective structuring of public participation (Moynihan, 2003, p. 164). Research published in leading journals on organizational structure’s impact on performance of public agencies has rarely examined end-user satisfaction based on actual data (Boyne, 2003, pp. 383-384). Empirical research that links end-users with public agency organizational structure is needed to test varied perspectives of current and past administrative reform movements.

The current Bush Administration management agenda stresses the features of citizen-centered government that is results in orientation, and based on market-driven principles (U.S. OMB, 2002). Reform agenda can be seen as a cycle of restructuring philosophies well articulated in the public administration literature since the 1990’s (Light, 1997); calling for reinventing government where a shift of focus from rules-driven organizational designs to more flexible, and
Reinvention and reform advocacy may be viewed as a set of tenets. Like other proverbs in public administration theory, these are normative as opposed to being clearly supported by systematic empirical research. Moving beyond the “proverbs” to study the relationship between normative administrative structures and organizational effectiveness requires systematic research to test their efficacy (Weiss, 1999, p. 41), and to then use the findings from such empirical studies to improve the business of government (Kelly and Swindell, 2003, p. 95). One method of assessing organizational effectiveness, especially in market-like structures, is end-user satisfaction, which is the focus of this study.

**Background**

**The Politics and Administrative Reform Connection**

Exploration into the effectiveness of public agency reform necessitates taking into account the relationship between such preferred change and politics. The assessments of the performance of public agencies are a regularly occurring extension of politics. Politics and organizational reform in government are highly interrelated. The politics of structural choice (T. Moe, 1989) entail hard-fought engagements, both because winners and losers result from new or reformed agencies, and because ultimately public agencies are about more than service delivery (Kirlin, 1984, p. 185). At stake are institutional features for resolving competing allocation choices throughout the policy-making process. The institutional features, such as public hearing processes, can be paths to both participation and alienation (Lando, 2003), and are important in understanding design changes in local governments (Clingermayer and Feiock, 2001, p. 6), as well as the state and national levels.
Assessing the performance of public agencies inescapably involves public discussion between individuals holding competing viewpoints and between divergent interest groups competing for different outcomes. As the progeny of politics, public-agency design and performance are shaped by interest-group conflicts and compromise (T. Moe, 1989).

Research on Congressional design of new federal agencies outlines fierce processes where constraints on performance result inevitably from features intrinsic to American constitutional democracy. These features include the instability of majority rule, interest-group conflicts, partisan politics, and restraints on the use of the coercive power of the state (Shepsle and Weingast, 1981 and 1995, p. 22). The questions of whether public agencies are designed to be effective (T. Moe, 1989, p. 267) or whether they are designed to fail (Zegart, 1996) extend to all levels of government (Berry, Chackerian, and Wechsler, 1999, p. 330).

Entrepreneurial Model

As an extension of reform from prior presidential eras, in the current Bush administration, a long-term outcome of government reform is an expectation that “Citizens will recognize improved service and performance and citizen satisfaction will increase” (U.S. OMB, p. 14). In advocating the development of a more market-like model of government, Osborne and Gaebler (1992, p. xix), suggest a set of propositions considered by them to be useful to improve government performance. These well-known recommendations of the past decade include a focus on the customer (p. 166) and end user satisfaction. Evaluating the merits of such propositions calls for measuring results as experienced by end-users and linking market design features with end-user choices and involvement (including end-user payments). The challenge is empirically assess these propositions.
End-User Satisfaction: Obligations and Limitations

There are many viable reasons to question the use of end-user assessments as valid criteria to judge the effectiveness of public organizations. Critiques of the market model in public administration have been based on constitutional issues (R. Moe and Gilmore, 1995), equity concerns (Fountain, 2001, p. 56), the uniquely public aspects of government (deLeon and Denhardt, 2000), and an argument for the role of public agencies to be well beyond that of simply service providers (Kirlin, 1996). Yet, given these very legitimate critiques related to the effectiveness of public agencies, as one aim of government is to satisfy end-users, it is an obligation to examine features of public agencies that result in satisfaction by the direct service recipients.

The measurement of end-user satisfaction along with tests of relationships between satisfaction and public-agency design is paramount to assess the effectiveness of “citizen-centered government” (in the current Bush administration terminology). Empirical research can help advocates and critics to move beyond the rhetoric of proverbs to test actual relationships between design features and outcomes (public satisfaction and quality of results). A central challenge in public management is to identify features that explain effective public-agency performance (Boyne, 2003) and governance (Moe 1994; Milward 1996), moving inquiry beyond speculation to verify empirically derived factors related to effectiveness (Brewer and Selden, 2000, p. 685; Simon, 1998). There is a need to move from a “lengthy list of variables” associated with performance to a parsimonious set of measures (Rainey and Steinbauer, 1999, p. 28).

Operational Considerations

Measurement of end-user satisfaction relates the public-agency to one part of the
organizational environment—the intended service recipient. The co-alignment of internal production processes with the external environment is an essential feature for understanding organizational performance and explaining organizations (Thompson, 1967). The connection between internal processes with the perceptions of end-users has been explored at the federal level (e.g. Serra, 1995, p. 178) as well as locally (Thomas and Melkers, 1999), across jurisdictions (Swindell and Kelly, 2002, p. 62) in research on citizen satisfaction with bureaucratic encounters, and in the emergence of e-government (Thomas and Streib, 2003). Within the reinvention framework of the 1990’s and operating assumptions of subsequent reform efforts, public satisfaction is one fundamental means of measuring performance (Hall, 2002, p. 23).

**Surveying End-Users**

Survey research on reinvention and related subsequent developments has followed four significant lines of inquiry. First have been surveys of end-users (e.g., Lueck, 1999; Hall, 2002). Second have been surveys of performance from the inside out: for example, perceptual measures of employees in the workplace (e.g., Brewer and Selden, 2000, p. 696) and/or of administrators assessing their agencies’ progress in meeting goals (e.g., Burke and Wright, 2002, pp. 10-11). Third have been surveys focusing on only one level of government, e.g. municipal (e.g., Streib and Poister, 1999, p. 111), state, or federal (e.g. Hall, 2002, p. 23).

A fourth important line of inquiry has sought to take into account the complexity of surveying of public contacts with government agencies (Thomas and Melkers, 1999; Kelly and Swindell, 2003). A challenge is to differentiate among varied types of end-users. Not all end-users of government services have the same relationship to a public agency as do customers of market driven organizations that one generally associates with the private sector. Captives, e.g. prisoners,
with no choice among service providers, are situated differently than voluntary consumers, e.g. users of park facilities, and both are situated differently than dependent clients, e.g. veteran health-facility users. The failure to differentiate among such end-users can be seen in the responses to a survey by a federal agency (Lueck, 1999, p. 2). Occupational Safety and Health Officials observed that, of course, many respondents to a survey would be unhappy; not only would they be subject to regulation that they would prefer to avoid (i.e. captives), but some of those surveyed would have been fined for workplace violations (i.e. punished captives).

Distinction between different types of end users is embedded in reforms designed to enhance responsiveness to the public; analysis must involve distinctions between clients as dependent on helpers in contrast to citizens and others who have relatively independent capacities to act (Osborne and Gaebler, 1992, p. 52). However, determining a public-agency’s end user is often a thorny problem. The difficulty in identifying a public agency’s “customer” (Swiss, 1992, p. 358) suggests the utility of distinguishing between different types of end users. (Hyde, 1991).

Differentiating the perspectives of varied types of government end users: direct buyers of government services (an equivalent of an open market of traditional paying customers in the private sector); clients in a limited market where individuals have few options for services, and captives in a closed market where end users have little or no choice of supplier found a strong correlation between service satisfaction and the degree of discretion that members of relevant publics could exercise in terms of selecting their service providers (Gilbert, Nicholls, and Roslow, 1998, p. 22-23). The direct buyer types (similar to private-sector “customers”) were significantly more satisfied with the service provided them by government than were the others.
Research Hypothesis

This research effort starts with clearly defined end-users and a set of design features associated with the literature on reform, choice in receiving service, end user focus, and impact on agency revenues. A summary of this literature and past research suggests the following four gaps and interrelated research hypotheses to investigate the gaps: One, a need exists for data-based empirical research, as opposed to additional proverbs; Two, a call for empirical research that surveys from outside the public-agency, a market measure, that moves away from reliance on surveys of employees; Three, empirical research is needed to link end-user measures explicitly with specific design features of public agencies; and Four, empirical research needs to differentiate among types of end-users in measuring connections and relationships among varied satisfactions and design features of public agencies.

In response to the first gap, each of the four reform related research hypotheses posed in this study is empirically based. The second gap of surveying performance from outside the agency is tested in hypothesis one:

\[ H_1 : \text{Service will be rated higher when end-users pay directly for services provided to them (v36).} \]

The third gap of relating public agency design features to performance rating is tested by hypotheses two and three:

\[ H_2 : \text{Service will be rated higher in government agencies that are dependent on users for their revenues. (v38); and} \]

\[ H_3 : \text{Service will be rated higher by users if an agency is end-user focused by design (v41).} \]

The fourth gap of differentiating between types of end-users is tested by hypothesis four:

\[ H_4 : \text{Service will be rated higher in government agencies where their public end users can exercise choice whether to use the services again or to go somewhere else for them (v42).} \]
This study focuses only on government agencies with clearly defined end-users. Not all
government agencies serve such people. Therefore, many public agencies were not included in this
study.

Methodology

The research hypotheses are intended to examine empirically the role of the user in
payment of service, dependence of agency on user satisfaction, users’ choice, and end-user focus
by design. The independent variables include four statements: user payment for service (v36);
dependence of agency on satisfied end users (v38); the extent to which the agency is deliberately
designed for end-user service (v41); and the opportunity for users to choose services (v42). These
measures attempt to shift from the qualitative discussion posed by reinvention proverbs to
quantitative measurement of public organization design and the actual satisfaction of service by
end-users. The working hypothesis of this paper holds that when end-user focused design features
are in place in the organization, user satisfaction with services and products will be higher than
when they are not.

Study Sample

This study included only government agencies having direct contacts with their end-users.
The study sample consisted of 17 public agencies and included 2,816 public-agency end-users. The
study sample included public agencies at all levels of government: Six agencies were federal
(N=884), six state (N=1,320), and five local (N=812). While the types of agencies are noted in this
report, the specific service ratings of each agency have been withheld to guard against the
possibility that the findings of any one agency would be inappropriately used to generalize about
an entire agency’s effectiveness. Because no randomized selection process was used to determine
the type of agencies to be included in this study sample, one cannot generalize about any specific agency’s overall performance that has been included in this study sample.

The federal agencies included in this study consisted of one U.S. Immigration and Naturalization district office (N=189), two U.S. Office of Personnel Management training center samples (N=74), a Veteran’s Administration hospital clinic (N=113), a U.S. Social Security local branch office (N=208), and a U.S. Postal Service branch office (N=100).

The state agencies consisted of a state university library (N=196), two state university cafeterias (N=376), an inter-city rail transportation system (N=400), a state university public safety department (N=200), and a department of motor vehicles local branch office (N=148).

The local agencies included a municipal building permit office (N=112), a city-run mass transit rail system (N=274), a municipal information and payment desk (N=93), an airport (N=159), and a county library branch (N=174).

The agencies in this study were selected as available data sets—based upon the research team’s access to the agencies. Once an agency was selected for this research undertaking, the end-users who comprised the pool of candidates from each agency were chosen through a randomized process. All respondents were queried directly after each completed a service episode at an agency. Of the 17 public agencies included in the sample, 15 were from south Florida (N=2,427), and two (those from the U.S. Office of Personnel Management) were from the Rocky Mountain region (N=74) of the United States.

The demographic characteristics of the respondents included: Age classed as 1=29 years or less (N=1,157) and 2=30 and over (N=1,362); Gender 1= male (N=1,396) and 2= female (N=1,368); and Ethnicity/race as 1= Asian, Black, Hispanic, and Other (N=1,509) and 2=...
Caucasian (N=782). Table 1, below, identifies the number and percent of respondents in each of the four demographic categories measured in this survey. Because all but 74 of this sample were derived from the southeastern region of the United States, the ethnic/racial composition of the study sample consists of more subjects representing Hispanics and Blacks than populations in some other regions.

The characteristics of the study sample are reported in Table 1, below. Each of the three categories included only two groups, and consistent statistical procedures were applied in this analysis:

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Sample Size</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30</td>
<td>1157</td>
<td>45.9</td>
</tr>
<tr>
<td>30 and over</td>
<td>1362</td>
<td>54.1</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,396</td>
<td>50.5</td>
</tr>
<tr>
<td>Female</td>
<td>1,368</td>
<td>49.5</td>
</tr>
<tr>
<td><strong>Ethnicity/Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Caucasian</td>
<td>1,509</td>
<td>65.9</td>
</tr>
<tr>
<td>Caucasian</td>
<td>782</td>
<td>34.1</td>
</tr>
</tbody>
</table>

**Organizational Design Features Rating**

Data for this study were obtained through two separate independent instruments: One gauged the design features of the public agencies sampled; the other identified the level of end-user satisfaction of the products and services provided. The two instruments include: rating of the extent to which an agency has the design features associated with reform; and a standardized end-user satisfaction survey tool. The specific statements and dichotomized scales included in the schedule to measure the above were as follows:
1. Direct User Involvement In Pay For Service
   1. Low (No money or a minimal fee is paid by the user)
   2. High (A substantial portion of the fee for services is directly paid for by the user)

2. Agency’s Dependence on User Satisfaction for Future Funding
   1. Low
   2. High

3. Degree of End-User Focus (designed to treat the user like a “customer”) of the Organization
   1. Low
   2. High

4. Degree To Which The End User Has Choice To Decide To Return To The Agency
   Or To Go Somewhere Else
   1. Low
   2. High

Independent of the end-user satisfaction survey, a panel of experts method was used to classify each of the public agencies included in the sample as either low or high in specific design features. Table 2, below, identifies the agencies in the study sample and the ratings received from the panel of experts as they pertain to the four design features measured above.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Sample Size</th>
<th>Variable 36, User Pays</th>
<th>Variable 38, Agency Dependence On Satisfied Customers</th>
<th>Variable 41 Customer Focus</th>
<th>Variable 42 Customer Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Immigration</td>
<td>189</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>University Library</td>
<td>196</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>College Cafeteria</td>
<td>169</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>City Building Permits</td>
<td>112</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>College Cafeteria</td>
<td>207</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>University Public Safety</td>
<td>200</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>U.S. OPM Training Center</td>
<td>52</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>County Tri Rail</td>
<td>400</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Municipal Metro Rail</td>
<td>274</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>U. S. Post Office Branch</td>
<td>100</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Municipal Help Desk</td>
<td>93</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>State Motor Vehicles Branch</td>
<td>148</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>County Regional Airport</td>
<td>159</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>County Library</td>
<td>174</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>V.A. Hospital</td>
<td>113</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>U.S. Social Security Branch</td>
<td>208</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>U.S. OPM Training Center</td>
<td>22</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>
For example, a Social Security Branch Office with 208 respondents was rated Low on V36, *User pays for service*; Low on V38, *Agency’s funding depends on user satisfaction at time of service*; Low on V41, *End-user focused*; and Low on V42, *User has choice to return for additional services or to go somewhere else for them*.

**End-User Satisfaction Rating Instrument**

A widely used instrument termed by others as a *Customer Satisfaction Survey* was used for this purpose (Gilbert, et. al., 1997, p. 23-24; Gilbert, et. al., 1998, p. 241-243). The instrument consists of 17 statements that are based on well-recognized service quality features. The instrument includes two empirically derived factors to gauge end-user satisfaction. They are *Satisfaction with Personal Service* (courtesy, timeliness, being treated as a valued customer, easy to get help) and *Satisfaction with the Service Setting* (convenient hours, place neat and clean, personal safety and security). The survey tool is especially useful in the measurement of user perceptions of service quality immediately following a service episode, when the user has the service encounter fresh in mind.

The *Customer Satisfaction Survey* instrument is administered to an end-user immediately following a service episode. It requires the respondent to indicate the extent to which he or she disagrees or agrees with each of the 17 statements (1 thru 17) based on a Likert-type scale (1=strongly disagree; 5=strongly agree). The two measures were originally identified by the factor analysis statistical procedure using principal components and varimax rotation. Factor analysis is a method that is a widely accepted statistical approach. As an analytic tool, factor analysis has been used in about 1 in 6 empirically based scientific journal articles (Aron and Aron, 1994, p. 512-515).
The instrument included five other variables. The overall satisfaction with setting and overall satisfaction with personal service were also correlated with Variable 18, as a criterion statement pertaining to the rater’s overall satisfaction with the product and service provided through the agency. This statement is used to measure the convergent validity of the two factors identified by them. This type of validity measurement has been established as an acceptable method in several studies in the customer satisfaction measurement literature (Cronin and Taylor, 1992; Parasuramen, et. al., 1985). In addition to the criterion statement, three other statements were added to the instrument to identify the respondents’ age (1=less than 30 and 2=30 and over) gender (1=male, 2=female), and ethnicity/race (1=Non Caucasian, 2=Caucasian). This allowed for control for demographic factors when testing for the association between design features and user satisfaction.

Testing The Suitability Of The Satisfaction Measures For Use In The Public-sector

Although it originally included some public-sector agencies, the Customer Satisfaction Survey includes two measures that were derived from a primarily private-sector database. Because of this, a need existed to retest the measures in terms of their suitability within the public-sector alone to assure that the measures are suitable for government. The empirical method used to retest the measures was factor analysis. This concern about suitability is well documented in research literature where factors identified in one study have not been replicable in another (Gorsuch, 1974). Although the task may be laborious, it cannot be assumed that factors identified elsewhere are suitable measures to apply in a subsequent study unless the next study requires the use of the same variables and true random sampling from the same population (Gorsuch, 1974, p. 182). These criteria delineated by Gorsuch for suitability could not be met in this study. Therefore, it
was an obligation of this research effort to retest the measures themselves as they pertain to the public-sector sample used here.

Factor analysis is partly founded on the principle of parsimony, with some variation to be expected from the factors previously identified in earlier studies (Nunnally, 1967). Using the *Customer Satisfaction Survey* instrument exclusively with public-sector organizations calls for an additional retesting to see if the factors identified in a public/private sector survey correlate well in an exclusively public-sector survey.

The empirical methods used to identify end-user satisfaction measures in an exclusive public-sector sample were *the same as* those reported in the original primarily private-sector study from which the two end-user satisfaction factors were derived. Factor analysis procedures were employed with principal components and varimax rotational procedures using the pairwise method when encountering missing variables. Two decision rules were used to identify variables that load on a factor: One, all had to have a factor loading of at least .50 and, two, none could have a split loading with any other factor above .35. Researchers typically consider variables that, at a minimum, have a loading of at least .30 in order to be considered to be part of a factor (Russett, 1967). More conservatively, some researchers may use .35, .40 or even higher levels as the cutoff (Aron and Aron, 1994, p. 512-515). The more conservative .50 was used in this study. Any variable so qualified as part of a factor must also satisfy the test of scale reliability based on the Cronbach alpha score of at least .60. The application of these decision rules provide added confidence that the customer satisfaction measures employed in this study are, indeed, applicable to public-sector organizations, *per se*.

Table 3, below, identifies the relative strength of the fit between the two empirically
derived factors identified in a public/private sector study that was previously reported (Gilbert et. al., 1997, p. 23) and the factors identified in this exclusively public-sector study of end-user satisfaction using the Customer Satisfaction Survey instrument.

Table 3--Comparison Of Factor Loadings Identified In The Original Private-Sector Dominant Study With The Public-Sector Sample Used In This Study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Public-agency Factors</th>
<th>Original Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2002</td>
<td>1997</td>
</tr>
<tr>
<td></td>
<td>Factor 1</td>
<td>Factor 2</td>
</tr>
<tr>
<td>1 Provider courtesy</td>
<td>.802</td>
<td>.762</td>
</tr>
<tr>
<td>2 Timely service</td>
<td>.727</td>
<td>.682</td>
</tr>
<tr>
<td>3 Competent employees</td>
<td>.756</td>
<td>.781</td>
</tr>
<tr>
<td>4 Easy to get help</td>
<td>.780</td>
<td>.737</td>
</tr>
<tr>
<td>5 Convenient operating hours</td>
<td>.360</td>
<td>.444</td>
</tr>
<tr>
<td>6 Neat and clean place</td>
<td>.654</td>
<td>.444</td>
</tr>
<tr>
<td>7 Treatment received</td>
<td>.791</td>
<td>.770</td>
</tr>
<tr>
<td>8 Easy access to service</td>
<td>.608</td>
<td>.406</td>
</tr>
<tr>
<td>9 Employees listen</td>
<td>.768</td>
<td>.740</td>
</tr>
<tr>
<td>10 Security within the organization</td>
<td>.748</td>
<td>.751</td>
</tr>
<tr>
<td>11 Security outside the organization</td>
<td>.829</td>
<td>.819</td>
</tr>
<tr>
<td>12 Prompt help</td>
<td>.760</td>
<td>.700</td>
</tr>
<tr>
<td>13 Service costs reasonable</td>
<td>.516*</td>
<td></td>
</tr>
<tr>
<td>14 Fair treatment</td>
<td>.732</td>
<td>.721</td>
</tr>
<tr>
<td>15 Organization delivers what it promises</td>
<td>.652</td>
<td>.437</td>
</tr>
<tr>
<td>16 Helpful personnel</td>
<td>.806</td>
<td>.769</td>
</tr>
<tr>
<td>17 Organization backs up its promises</td>
<td>.654</td>
<td>.415</td>
</tr>
<tr>
<td>18 Overall, product and service quality*</td>
<td>.928</td>
<td>1.09</td>
</tr>
<tr>
<td>Eigenvalue (1.0 or higher)</td>
<td>54.58</td>
<td>6.39</td>
</tr>
<tr>
<td>% of variance</td>
<td>.93</td>
<td>.72</td>
</tr>
<tr>
<td>Alphas</td>
<td>.81</td>
<td>.54</td>
</tr>
</tbody>
</table>

*Variable 18 was used as the criterion measure from which the other factors could be validated. It was omitted as a variable in the factor analysis procedure.

a The Cronbach Alpha scale reliability was less when this was included than when deleted, thus it was deleted.

The comparison of the factors derived from the two studies reveals a strong similarity between service satisfaction measures identified in the original dominantly private-sector sample and that taken from an all public-sector sample used in this study. While many different factors
may have been derived from the two studies using the same variables, the same two factors were identified in both samples, each with eigenvalues over 1.0. The eigenvalues and percent of variance in the two studies are very similar. Factor 1 in both studies consists of variables 1, 2, 3, 4, and 7. In this, the public study, some additional variables were found to load on factor 1, as well. They include variables 9, 12, and 16. Factor 2 in both studies include variables 6, 10, and 11. Variable 5 loaded on factor 2 in the original study but did not load as strongly in the public-sector study. The Cronbach alphas of inter item correlation within a factor in both studies are similar with Factor 1 alphas near the .90 level and Factor 2 alphas near the .72 level. The Cronbach’s alpha is a widely used measure of reliability measuring how much each item is correlated with the other item(s)—the overall consistency of the test (Aron and Aron, 1994, p. 512).

This study (and, perhaps, future studies of public agencies where the Customer Satisfaction Survey may be used) designates Factor 1 the PSatisfaction with Personal Service and as Factor 2 the PSatisfaction with the Service Setting to distinguish them from the more generically identified factors originally derived from a dominantly private sector sample. The use of these two factors provides greater insight about agency design features than would be possible to infer from variable 18 alone. In both studies, the two factors were highly correlated with variable 18, the criterion validity measure that identified each respondent’s overall assessment of the product and service quality that they received. However, it is more scientifically and practically prudent to use the two factors identified in this study than variable 18, because the factors have demonstrated empirically defined levels of scale reliability (not possible with the use of variable 18, alone), they are highly associated with variable 18 so that their measure would equate to a measure of variable 18, and that measure cannot shed light on the service quality features that comprise Factor 1 and Factor 2.
Thus, the two factors represent empirically derived constructs that are highly correlated with variable 18 and shed more light on service features than does variable 18, *per se*.

**The Integration Of Data From The Two Research Instruments**

The ratings of the design features (low versus high agency characteristics for V36, 38, 41, 42) of each agency were added to the data records attained from the *Customer Satisfaction Survey* along with data gathered on Variable 18 (convergent validity measure used for internal validation of constructs) and the respondents’ ages, gender and ethnicity/race. Thus, each of the 2,816 records in this study sample included data pertaining to each respondent’s ratings about the service each received from a public-agency using the *Customer Satisfaction Survey*, the high or low design features attributed to the agency rated, and the end-user’s age, gender and ethnicity/race. These steps lead to one data set for each of the 2,816 records that were used for data analysis in this study to test the assumptions of reinvention and reform with actual service satisfaction by end-users.

**Comparison of End-User Satisfaction Ratings With Agency Design Features**

Presented in Table 4, are the end-user satisfaction ratings on the two measures (dependent variables), *PSatisfaction with Personal Services* and *PSatisfaction with the Service System*, with the high and low ratings of the design features of public-service delivery systems in the study sample. The independent variables are the agency features.
Table 4-Relationships Between Organizational Design Features And End-User Satisfaction

<table>
<thead>
<tr>
<th>Measure</th>
<th>Sample Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Student t</th>
<th>df</th>
<th>Significance</th>
</tr>
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<tr>
<td><strong>V.36: User Pay for Service</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td><em>PSatisfaction with Personal Service</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>721</td>
<td>3.64</td>
<td>.865</td>
<td>5.73</td>
<td>2499</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>High</td>
<td>1780</td>
<td>3.41</td>
<td>.925</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>PSatisfaction with Service Setting</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>733</td>
<td>3.75</td>
<td>.766</td>
<td>3.36</td>
<td>2687</td>
<td>.001</td>
</tr>
<tr>
<td>High</td>
<td>1956</td>
<td>3.62</td>
<td>.883</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>V.38: Agency’s Dependence on User Satisfaction for Future Funding</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td><em>PSatisfaction with Personal Service</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1567</td>
<td>3.32</td>
<td>.932</td>
<td>-11.42</td>
<td>2499</td>
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<tr>
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<td>3.74</td>
<td>.819</td>
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<td><em>PSatisfaction with Service Setting</em></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1750</td>
<td>3.57</td>
<td>.870</td>
<td>-7.29</td>
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<td>&lt;.001</td>
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<tr>
<td>High</td>
<td>939</td>
<td>3.82</td>
<td>.800</td>
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<tr>
<td><strong>V. 41: Agency’s Focus On User Satisfaction</strong>&lt;sup&gt;3&lt;/sup&gt;</td>
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<td><em>PSatisfaction with Personal Service</em></td>
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<tr>
<td>Low</td>
<td>1260</td>
<td>3.18</td>
<td>.918</td>
<td>-17.06</td>
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<tr>
<td>High</td>
<td>1241</td>
<td>3.77</td>
<td>.809</td>
<td></td>
<td></td>
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<tr>
<td><em>PSatisfaction with Service Setting</em></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1548</td>
<td>3.50</td>
<td>.862</td>
<td>-11.11</td>
<td>2687</td>
<td>&lt;.001</td>
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<tr>
<td>High</td>
<td>1141</td>
<td>3.87</td>
<td>.798</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>V. 42: Degree To Which The User Has Choice To Decide To Return To The Agency Or Go Somewhere Else</strong>&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><em>PSatisfaction with Personal Service</em></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1785</td>
<td>3.31</td>
<td>.907</td>
<td>-14.53</td>
<td>2499</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>High</td>
<td>716</td>
<td>3.88</td>
<td>.801</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>PSatisfaction with Service Setting</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1962</td>
<td>3.53</td>
<td>.858</td>
<td>-12.70</td>
<td>2687</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>High</td>
<td>727</td>
<td>3.99</td>
<td>.749</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> Wilks’ = .998<sub>(2,1984)</sub> F=2.16, p=<.115  
<sup>2</sup> Wilks’ = .998<sub>(2,1984)</sub> F=7.68, p=<.001  
<sup>3</sup> Wilks’ = .962<sub>(2,1984)</sub> F=37.72, p=<.001  
<sup>4</sup> Wilks’ = .906<sub>(2,1984)</sub> F=97.80, p=<.001

**Study Findings**

The results of t-tests in agencies that scored either high or low on each of the four design features reveal some notable differences in both user *PSatisfaction with Personal Service* and *PSatisfaction with the Service Setting* measures. These comparisons between those agencies rated...
high or low and the ratings of customer satisfaction are shown in Table 4 without controlling for respondent age, gender, and ethnicity/race. The results of the t-tests reveal that, when the user pays little or no fees for services (v36), the agency is dependent on user satisfaction for future funding (v38), the agency’s focus is on user satisfaction (v41), and the degree to which the user has choice to return or go somewhere else (v42), the user is more likely to rate the agency higher in satisfaction than when the agency features were the opposite. However, when controlling for the interaction effects of differences in respondents’ age, gender, and ethnicity/race through the application of the MANCOVA procedure as illustrated by the Wilks’ lambda post hoc statistical applications footnoted in Table 4, no difference in respondents’ satisfaction was found based on pay for service (v.36). No effect was found on the other three design features and customer satisfaction based on differences by age, gender and ethnicity/race.

The analysis supports three out of the four hypotheses associated with this research effort. No effect was found when the users pay directly for services (V.36) and when they do not. However, significant differences were found when the agency depends on the user for its revenue (v.38); the agency, itself, is customer focused in the way it does its business (V.41); and that is also evident when the user can exercise choice in deciding to return to the agency or go somewhere else to get the service he or she needs or expects (V.42).

Implications Of Study Findings

This study provides an empirical basis to test some of the assumptions of reform propositions. By disaggregating end-users, the study found that, when controlling for age, gender, and ethnicity, three design features are associated with end-user satisfaction.

As the study sample includes local, state, and federal agencies, the findings suggest
applicability across the intergovernmental range—moving from the local playground and county courthouse to the White House. This empirical approach suggests the possibility of transitioning from the rhetoric of reinvention and other reforms to the actual undertaking of testable research questions pertaining to them. Moreover, the methodology may provide an approach for testing a wide range of performance questions across various public agencies. There are limits to the findings, as the agencies selected for the study do not represent the full range of agencies or roles performed by public agencies. Also, many of the end-users selected enjoyed greater flexibility and choice than is always possible in the public-sector. Therefore, they were not fully representative of all end users who receive services and products from government organizations, and the findings need to be viewed accordingly.

But despite the limits, the findings empirically connect three features of public-agency design with end-user outcomes. The research design narrows the search for parsimony in variables that connect agency performance with public-agency design. Across a variety of agencies at the federal, state and local level, a wide range of respondents reacted favorably to the public agencies characterized by delivery systems that incorporated local planning, end-user choice, and an end-user satisfaction focus. The findings imply the importance of these features for end-user satisfaction and have implications for the design of delivery of government services.

The survey findings identify the end-user aspect of reform with specific features in public-agency design. For the type of agencies surveyed, this suggests an empirical link between the theory of the intervention (agency design) and the theory of the outcome (end-user satisfaction). However, end-users are not the only stakeholders for public agencies. Research in best practices in public agencies has found successful public managers serve a wide range of stakeholders beyond
end-users, managing both upward and outward to add public value (Moore, 1995). The question of measuring performance through satisfaction of a wider range of stakeholders beyond direct users is not addressed by this study. But, for the piece of performance that measures end-user satisfaction, the research provides support for linkages between agency design and end-user satisfaction.

This study does not support or reject pay-for-services arguments that are critically important in a wide range of public policy debates and in the introduction of market-like choices among end-user options. The study sample was not designed specifically to capture all the areas, e.g. school vouchers, where that is a pressing public policy issue.

This research provides a design to move beyond the symbolism characteristic of federal reform movements in the past century (March and Olsen, 1983) and the cyclical character of reform movements (Light, 1997), as well as the limits of descriptive and best practice research characteristic of the “reinvention movement” (Frederickson and Johnston, 1999) More generally, in identifying measurable agency features that are associated with end-user satisfaction of government agencies, the findings provide an empirical link between the organization and a piece of the external environment. The expectation among elected officials that government needs to be responsive to those it serves creates an expectation for public managers of appropriate agency designs to link agency performance with end-user satisfaction. This study suggests that research on end-users can address a piece of the design puzzle for explaining public-agency performance.
BIBLIOGRAPHY


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Appendix

Statements Used To Derive Measures Pertaining To Characteristics Of Public Service Delivery Systems
The specific statements and scales included in the schedule to measure the above were as follows:

V36. Direct User Involvement:
1. No money is paid for services by user
2. A minimal fee is paid by the user
3. A substantial portion of the fee for services is paid for by the user

V38. Agency’s Dependence on User Satisfaction for Future Funding
1. Very low
2. Low
3. Moderate
4. High
5. Very High

V41. Degree of Customer Focus (designed to treat the user like a customer) of Organization
1. Very low
2. Low
3. Moderate
4. High
5. Very high

V42. Degree to Which the Customer has Choice to Return to the Agency for Future Service if the Service they Receive is not Satisfactory
1. Very low
2. Low
3. Moderate
4. High
5. Very high