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ABSTRACT

Previous studies of public organizational performance have focused mostly on operating efficiency, without dealing with the complex accountability problems associated with plural public interests. The fact that an agency exhibits multiple and often paradoxical performances has not been of comparable concern. This failure to account for performance in a multiple-constituencies context has led to a narrow view of how well agencies do. To broaden the research on agency performance, a multiple-constituencies model is introduced and tested for statistically significant variances. The findings confirm the model's robustness in structuring a dependent variable for empirical research on why agencies perform toward different public ends. Using data from UMTA Section 15 reporting, the model is applied to urban mass transit.

Agency performance represents the ongoing results of public organizational processes. Performance receives high political visibility because it provides the means to judge (1) consistency of agency decisions with policy mandates in an intergovernmental system, and (2) the satisfying of diverse public needs in a plural society. As a result, agency performance is intrinsically interesting to oversight bodies (e.g., congressional subcommittees, GAO, department analysts) and public watchdogs. From a broader theoretical perspective, it is also interesting to scholars because performance reflects who gets represented in the complex allocation of public resources.

However, knowing how to analyze performance is a vexing issue. Because agencies have competing constituencies to serve, providing for them analytically with equal emphasis is a difficult enterprise. More often, agency results are *skewed* to favor some constituencies more than others, making management look good to some and bad to others. Moreover, in research excellence is in the eyes of the beholder, who is likely

to be of a singular mind. Theorists—convinced that operating efficiency can be the only true measure of responsible government—limit their concepts and research to a single standard of success. Other theorists—convinced that effective provision of services to needy constituencies is the only true measure of compassionate government—do likewise. In either case, not meeting the primary standard means *poor* performance.

In the American public economy, single-standard approaches are inconsistent with the intergovernmental structure of government and plural society. Moreover, from a multiple-constituencies standpoint, comparable agencies might well *skew* performance differently from one another and still all be successful. This is especially visible at the urban level, where differences over the meaning of "good" performance and the matching of outcomes to affected constituencies are at the core of understanding the American city's infrastructure crisis and politics of economic development.

This is evident in two ways. First, urban governments have operated for more than a decade in an era of fiscal constraints brought on by taxpayer revolts, resulting in continued budget crises, service interruptions, and indecisive planning. Second, urban services are being refocused by two related shifts: (1) loosely coupled providers (police, health, transit, sewerage and water) are becoming parts of more integrated systems of planning and coproduction, and (2) resources are reallocated away from welfare entitlements and toward cooperative public investments to foster regional economic development.

The result is a metapolicy environment (Gustafsson 1983) involving widely varying but interdependent views on the performance of public agencies. In mass transit, for example, taxpayers expect the use of quantitative methods and economic norms to yield more efficient operations. At the same time, however, when in conflict transit agencies are often required to make policies consistent with nontransit service demands such as cooperative land-use planning, retrofitting for handicapped and elderly, providing de facto homeless shelters, and cost sharing of urban development projects.

This metapolicy clash brings the query of whether researchers should be primarily interested in individual measures that form a bottom line for the agency or equally interested in the way organizational performance is skewed toward one or another constituency? This paper argues that performance can be fully accounted for only in a multiple-perspective context. It introduces a new conceptual framework,

demonstrating its capacity to produce conceptually valid and statistically significant indices for a dependent variable in research asking why comparable agencies perform differently from one another.

Focusing on *organizational processes*, the conceptual underpinning of the framework is organization theory, not personnel performance literature or the cost/benefit approach. The latter focuses on evaluating specific policy issues (like a bottle bill) or agency programs (like mosquito abatement). While the model is intended to be applied broadly (Wagner and Schneider 1987), its robustness is illustrated here by examining forty-two agencies in urban mass transit.

PERFORMANCE: A VARIABLE IN NEED OF CONCEPTUAL FOUNDATION

What does it mean to say that an agency performs well? If an agency operates efficiently, is it successful? If it is inefficient, does it necessarily lack excellence? Can a conceptual foundation based on parity among contending performance objectives be argued, or do performance evaluations inherently require prioritizing a bottom line? In a plural society fraught with policy-issue interdependency, any answers to these questions would have to acknowledge the legitimacy of several, often contradictory, standards. One way to measure performance according to multiple perspectives is by a framework that detects how performance is *skewed* toward different organizational *constituencies*.

Constituencies include all interested stakeholders who depend on the organization to realize their objectives and on whom the organization is dependent (Rhenman 1968; Miles and Cameron 1982). The term denotes both "generic" stakeholders common to most public organizations (executive management, operations management, and taxpayers) and "specific" stakeholders relevant only to the particular public sector being studied (Freeman 1984). Relevant constituencies can be derived logically from an analysis of applicable legislation, intergovernmental fiduciary relationships, service-delivery technologies, and the labor and political task environments (Tsui 1990; Grizzle 1986). As argued below, relevant constituencies also may be classified according to a generic set of organizational perspectives.

Distributing benefits to different constituencies results in *performance skewness*, which measures the degree to which some agency outcomes are elevated above others. This skewness is prima facie evidence of bias in the distribution of

performance results to competing constituencies. In transit, for example, one agency may pay higher returns to resource providers such as taxpayers and labor while another pursues higher operating efficiencies; one agency may emphasize its own administrative robustness (size or regional prominence) while another emphasizes effective social programs for transit-dependent users.

Few would contest the presence of such bias in agency performance, but little empirical research has set out to study it. Most work to date begins with priority choices that reduce performance to a consistent set of measures, usually regarding operational efficiency (Fielding 1987; Grizzle 1984). A few have offered a multiple-measures framework (Yu 1988; Perry and Babitsky 1986; Vaziri and Deacon 1983), but they have not provided the conceptual foundation to associate clustered measures with different types of constituencies.

Some organization theorists have developed frameworks that abstractly relates performances to multiple constituencies (Quinn and Rohrbaugh 1983; Quinn and Cameron 1983; Cameron 1986), but their work is difficult to operationalize. For example, Quinn and Rohrbaugh developed a framework for classifying the performance literature around generic conceptualizations but not for grounded empirical research on comparable organizations. In political science and public administration, most constituency-based research on performance is in the form of case studies (for example, Pressman and Wildavsky 1973; Sayre and Kaufman 1965; Danielson and Doig 1982). Only a few studies have attempted intersubjective methodologies to identify what constituencies exist for an organization (Tsui 1990; Grizzle 1986), and none has successfully derived a framework for empirically associating different constituency-grounded measures of performance.

MULTIPLE SIMULTANEOUS PERFORMANCE INDICES (MSPI)

The conceptual shortcomings of past research point to five criteria for an analytical framework designed to study performance skewness as a dependent variable:

- Incorporating contemporary concepts found in public organization theory so as to be broadly applicable to the field.

- Structuring performance measures according to different organizational perspectives so as to make patterns of skewness distinguishable to multiple perspectives.

- Incorporating a link between stakeholder objectives and performance measurement so as to associate outcomes with constituency interests.

- Targeting comparative research at a policy or industry level (e.g., public transit, county mental health, K-12 education, water resources) so as to deal with organizations of similar contextual settings.

- Maintaining an analytical structure that was categorical so as to "weed out the overlap and get down to the core variables" (Campbell 1977, 39).

The degree of difficulty in designing a construct consistent with these criteria rests on agreement about how constituency objectives relate to legitimate administrative authorities and critical organizational functions found in public agencies. In the model here—multiple simultaneous performance indexes (MSPI)—a four-cell matrix incorporates two theoretical dimensions viewed by many scholars as essential perspectives in public organization and policy:

- **Dimension 1: Units of Authority.** Bozeman (1987) contributes an important distinction to the long-standing discussion of "publicness." He concludes that "organizations are not wholly public or private but are more or less public in respect to particular aspects of organizational activity" (p. 86). Furthermore, the degree of publicness evident in an agency's performance depends on its sources of legitimated authorities. Bozeman identifies two: "Economic authority" is directed at market achievement and organizational maintenance behaviors. "Political authority" is found in program legislation, regulation, and organic statutes. The distinctions are consistent with both the literature on internal efficiency and external effectiveness (Pfeffer and Salancik 1978), and the distinctions made between "bureaucracy and politicians" (Aberbach et al. 1981).

In reality, sources of organizational legitimacy are found within either "issue networks" (Heclo 1978) or "a political economy composed of constituencies" (Pennings and Goodman 1977, 154) where stakeholders are the purveyors of legitimated authorities. With Bozeman's distinction, constituencies can be defined as either economic interests sustaining the organization or political interests sustaining those external stakeholders interdependent with it. For MSPI scheme, constituencies and performances are classified into *organization*-centered and *social program*-centered categories. The first addresses the organization's robustness, including dominance, achieved growth, and

operational efficiencies. The second deals with how well-off the organization's actions make external stakeholders (Gates 1980).

- **Dimension 2: Levels of Function.** Recent studies of public sector strategic management (Boschken 1988; Bryson 1988) distinguish between two functional levels of performance relative to different organizational constituencies (Ansoff and Brandenburg 1971). At the *strategic* level, focus is on institutional purpose: What are the objectives of the organization as a whole and its social programs? At the *operational* level, focus is on how resources are acquired and employed to produce services.

Strategic performances, therefore, show the well-being of the *whole*. They are of primary interest to executive management concerned about holding the organization together (Boschken 1988) and to different service users, politicians, and oversight agencies concerned about protecting public entitlements and how services fit effective social demands (Kaufman and Jacobs 1987). In contrast, operational performances address *subpart* functions of the organization and its external contributors. This level is of primary concern to operations managers responsible for the service-delivery process and to external resource providers concerned about what they receive from that process for their contributions (e.g., labor and taxpayer subsidies) or for absorbing externalities (e.g., public impact of accidents or pollution resulting from service delivery).

As shown in Exhibit 1, the *units* (organization vs. social-program authorities) and *levels* (strategic vs. operational functions) form the horizontal and vertical axes, respectively, of a *four-cell matrix* containing multiple simultaneous performance indices (MSPI). As independent contributors to each cell's concept, the two dimensions define the quadrants as *categorical* perspectives. Each quadrant is distinct but necessary to understand the range of organizational mindsets that bear on the pursuit of organizational objectives and on the management of agency resources. Together the quadrants incorporate what scholars in the field consider central to the study of public organization.

Quadrant concepts are the basis on which constituencies are associated with agency performances. First, each quadrant may contain several constituencies exclusive to it, but all within the quadrant share its perspective. Inclusion is based on the consistency of a constituency's objectives to a quadrant's cell concept, determined by two criteria:

1. Whether the constituency is interdependent with organizational processes principally because of economic *or* political empowerment, and

2. Whether the constituency is interdependent because of strategic purpose *or* operational requirements.

Second, a quadrant's perspective has different facets, which require multiple measures to represent more fully its performance focus. While numerous measures are found in the literature (Campbell 1977; Fielding and Anderson 1983), those suited for the MSPI matrix must each represent at least one constituency's primary objective within a single quadrant and be consistent with the unit and level defining that quadrant. Although this does not require constituencies within a quadrant to share each other's objectives, in order to be associated with a quadrant's measures all must be identified with some facet of its overall perspective.

Exhibit 1
Multiple Simultaneous Performance Indexes:
Organizational Perspectives

| | UNIT OF AUTHORITY | |
	Organization (economic)	*Social Program* (political)
Strategic	ORGANIZATION EFFECTIVENESS Do our customers like us? I	SOCIAL EFFECTIVENESS Are we meeting our public mandates? II
Operational	III INTERNAL EFFICIENCY Are we minding the shop?	IV RECIPROCAL EFFECTIVENESS Are we reciprocating value to our resource contributors?

L E V E L O F F U N C T I O N

The matrix is potentially paradoxical in that one quadrant may contain constituencies with objectives contradictory to those in another. For example, Friedman concludes that "the environment in which a bureau operates may [impose constraints] which limit the exercise of bureaucratic discretion" (1984, 347). Consequently, managers function not only according to their own interests as constituencies *within* the organization (quadrants I or III) but also according to an *imposed* "web of rules and statutes" (Downs and Larkey 1986, 45) dealing with social programs (quadrants II and IV).

All quadrants are assumed to be equal and essential to organizational processes but independent from each other in perspective and variability. MSPI provides a broadly applicable basis for defining, segmenting, and relating different organizational performances in a scheme that allows one to compare variation among agencies in skewed outcomes. Each quadrant's perspective is described below.

Quadrant I (organization/strategic) performances demonstrate *organization-wide effectiveness* (Campbell 1977, 36) achieved by enticing *consumer use*. Measures consistent with this include revenue growth, market penetration, and service consumption. The essential performance question of this perspective is: Do our customers like us?

Quadrant II (social program/strategic) performances demonstrate *social effectiveness*. The distinction between quadrants I and II is between which constituencies define the quadrant's strategic purpose. For social programs, those having external political authority and demanding public-regarding objectives define quadrant II's strategic purpose (Bozeman 1988). Where senior management (quadrant I) seeks revenue opportunities through customer endearment, performance in quadrant II is *service provision* mandated by law or the clients' fiduciary representatives (e.g., in transit, the Urban Mass Transportation Administration [UMTA] and state governments). Social program users judge organizational performance from this perspective, requiring the agency to address the question: Are we meeting our public mandates?

Quadrant III (organization/operational) performances define an organization's *internal efficiency*. In contrast to quadrant I effectiveness, quadrant III measures are "at a level of detail useful for managers with operating or supervisory responsibilities, but of scant usefulness for top level officials who have to determine organizational objectives and goals" (Schick 1970, 41). Moreover while many presume these two levels to be compatible and synchronized, the categorical

nature of the matrix does not exclude contradiction. Measures consistent with internal efficiency are cost-per-unit-of-output indicators, including the various components of service production and delivery. The essential question of this perspective is: Are we minding the shop?

Quadrant IV (social program/operational) performances encompass the impacts of operations on external contributors, who view themselves as voluntary or involuntary resource providers to the service delivery process. The essential distinction between internal efficiency (quadrant III) and program-based *reciprocal effectiveness* lies in the referent authority. A managerial referent (quadrant III) holds economic authority to decide what it costs to produce one unit of service; an external stakeholder (quadrant IV) holds politically supported concerns about what it is getting for its resource contribution. The quadrant contains organized labor and taxpayers, where performance indicates benefits received from making the contributions, and a class of involuntary constituencies concerned about minimizing their exposure to the organization's externalities. The performance question here is: Are we reciprocating value to our resource contributors?

Given these cell concepts, performance skewness is operationally defined as the relative bias toward matrix quadrants. Focus is on quadrant performance and not on any single constituency or measure within a cell because (1) constituency objectives are incorporated in the quadrant's perspective as defined by its unit of authority and level of function, (2) multiple measures consistent with cell concepts offer greater measurement validity than any single measure, and (3) research of broad interest focuses on conceptual application of MSPI and not the individual measures of any particular public sector.

METHOD DESIGN

Values for performance skewness are determined by a two-stage methodology. Data were first developed for individual quadrants and then scaled according to two operational dimensions of skewness. In the *first stage*, quadrant values were calculated by a regression technique that estimates performance-measure frontiers for an industry set. Adapted from a procedure found in micro-economics (Charnes et al. 1981; Silkman and Young 1985), this technique was used because it incorporates more global factors than do nonregression techniques, making it the best linear unbiased estimator of comparative performance. Its application to the data involved two steps.

First, each performance measure consists of coupled components representing the association of some organizational outcome with some point of reference. As necessary and sufficient conditions, each must reflect at least one constituency's primary objective and be consistent with a specific quadrant's cell concepts (e.g., unit of authority and level of function). A measure, therefore, can be relevant to only one quadrant. With these conditions, measures are determined from content analysis of field interviews, constituency documents, intergovernmental mandates, and existing conventions.

Second, a performance frontier for the industry set is estimated from a regression of each measure's coupled components. It is defined as the outer boundary of achievable performance for the agency sample population. Graphing this on a scattergram, the frontier would be a line parallel to the regression line at two standard deviations. Selecting two standard deviations is arbitrary but is done to avoid abnormal effects of outliers. For the sake of keeping these hyper-performance outliers in the sample, they are assigned the same score as those at the frontier. For similar reasons outliers at the opposite extreme are adjusted back to the negative two standard-deviation envelope.

One agency's performance relative to another in the sample is based on its deviation from the industry frontier. Performance for individual agencies is defined by the regression's residuals; on a scattergram it is the distance any point lies from the frontier line. These scores are then studentized (residuals divided by standard deviation) to provide a common norm across all MSPI measures. This is necessary—rather than using raw residuals—because measures must be additive to yield a quadrant score. Each measure's contribution to quadrant variance is dependent on that measure's regression coefficient (R^2). Because a measure having a high coupled-component relationship leaves little to be explained by variables exogenous to the measure, that measure's importance to quadrant variability is reduced by the size of its R^2. Maximum weight is assigned to any measure having an R^2 of .50 or lower.

The performance frontier method described above establishes values for individual measures found within each of MSPI's quadrants. The *second stage* of determining values for performance skewness involves summing the studentized scores for all measures within a quadrant. The resultant quadrant indices allow comparison of quadrants according to performance skewness. To the extent that skewness is defined as bias in performance outcomes, its operational definition is specified by two dependent variables:

1. *Quadrant emphasis.* Organizations may have performances skewed toward different MSPI quadrants, such that we can look at variances across agencies according to quadrant emphasis. It determines which sets of constituencies, organized according to quadrant perspectives, are relatively advantaged by organizational outcomes. Estimates of quadrant emphasis are interval scaled.

2. *Paradox Resolution.* With competing constituencies, contradictory performances are bound to exist. Consequently, any sample is likely to exhibit paradoxes between quadrants. These are detected by a correlation matrix of the four quadrants, where negative association between any two is evidence of an industry-wide paradox. The question of skewness arises in looking at how agencies within the industry sample vary in resolving the paradox. Resolution takes one of three forms: (1) a tradeoff favoring one quadrant at the expense of another, (2) a tradeoff in the reverse, and (3) paradox acceptance, where the paradox is maintained. To scale this variable quadrant index scores are compared and agency clusters are coded according to the trichotomy.

Usefulness of the MSPI model and its methodology are limited by five factors:

1. Because any conceptual framework establishes a focus in its design, MSPI may be idiosyncratic to those not interested in metapolicymaking at the macro-organizational level. This would include those economists who prefer the single-issue or programmatic focus of cost/benefit analysis and human-resource specialists focused on personnel performance (Zedlewski 1986).

2. MSPI is designed for application within a specific public service activity. Agencies from different sectors cannot be pooled into the same sample for comparison.

3. The degree of difficulty in applying MSPI varies by sector. Easiest application is made to service sectors; the more difficult to regulatory sectors.

4. MSPI cannot tell whether sector-wide levels of performance are acceptable, mediocre, or bad. It is, therefore, of little use to those seeking to determine the "goodness" of output for a whole industry.

5. The matrix consists of categorical quadrants, but this does not entirely eliminate the risk that some measures may appear to relate to more than one quadrant.

PUBLIC TRANSIT PERFORMANCE

MSPI's ability to distinguish significant variance among agencies in performance skewness is illustrated by the case of urban mass transit, an industry that typifies much of the transformation in urban public administration. Since the early 1980s, transit has experienced both opportunity and fiscal constraints initiated by federal cutbacks during the Reagan and Bush administrations.

What emerged is a dual consciousness of the agency as both a distinct organizational unit and a more tightly coupled intergovernmental actor providing social programs related to regional economic development. Equally so, agencies have become more aware of the importance of strategic planning along side their traditional operational concerns. This transformation, spurred by competing constituencies, is where performance skewness is of particular interest as a dependent variable in research on government organizations having to perform in a metapolicy environment (Wachs 1985; Fielding 1987; Perry and Babitsky 1986).

Much of public transit research maintains either a narrow focus that emphasizes operations efficiency or a mass indicator approach that provides little structure for theory-based analysis. In the first instance, some have said that "performance analysis for *strategic management purposes* should rest on efficiency measures" (Fielding 1987, 116; emphasis added). This leaves the impression that transit organizations have a single, clear objective around which general agreement exists for all constituencies. It does not overtly recognize the question of performance skewness, nor does it incorporate excellence in other than operations (quadrant III).

With the mass-indicator approach, performance is seen as multiple measures within an overlapping three-legged framework of "service inputs," "service outputs," and "service consumption" (UMTA 1988, 83; Yu 1988; Fielding 1987; Perry and Angle 1980). While this framework may seem broadly defined and theory based, it leaves considerable ambiguity as to how measures relate to each other as well as confusion over which performances are relevant to what constituencies. Again, the question of performance skewness is not explicitly raised.

Going beyond these limitations, the MSPI framework is consistent with a multiple constituencies assessment and provides a basis for examining skewness. In transit, the issue network (Heclo 1978) is dominated by a coalition of interdependent constituencies held together by the critical

importance of each member to the transit agency, operating as a resource-dependent organization (Pfeffer and Salancik 1978). To illustrate, this study developed measures for the four quadrant perspectives consistent with transit constituencies (detail for this is in Appendix A).

Using Bozeman's "publicness" concept, transit performance involves legitimacy both in responding to competitive influences (economic authority) and in addressing social program demands (political authority) at strategic and operational levels. Beyond executive management's strategic focus on markets and the organization's robustness (quadrant I), transit agencies are driven by UMTA's social agenda for the "transportation disadvantaged" (quadrant II). With UMTA and state government mandates, transit-dependent users include the working poor, core-area businesses, low-income elderly, the handicapped, and the urban nonworking poor who rely on transit "mainly for noncommutation purposes" (Altshuler 1979, 299). Also in quadrant II are local governments and elected officials seeking these goals, as well as regional economic development.

At the operational level, specialized management (quadrant III) looks after performance according to the organization's production-flow functions. Labor and taxpayers (quadrant IV) track performance according to their resource contributions. In addition, there is a set of involuntary constituencies in quadrant IV who absorb externalities. Pedestrians and motorists who are concerned about safe operation of vehicles are prominent in transit.

The sample consists of forty-two transit agencies drawn from urban areas with populations greater than 500,000. All are operators of buses, rails, or both. Although it is conventional in transit to group agencies for analytic purposes by their organization size and production mode (rail vs. bus), MSPI makes no assumptions about causal relationships, including those pertaining to size or mode. The focus is exclusively on determining the quality of the MSPI dependent variables for the sample population, without presupposing or controlling for cause. Although prior research has shown that *individual* measures may be sorted by agency size, mode of transportation, and other control variables, this does not give reliable clues about how performance *skewness* behaves with respect to MSPI *quadrants*. Causal analysis is beyond the scope of this article.

Data for the analysis were extracted from UMTA Section 15 reports for fiscal years 1987 through 1990. Each measure

was transformed into four-year averages to avoid cyclical effects and year-to-year aberrations. The measures were then aggregated by quadrant to form the four indices. Exhibit 2 provides a summary of the data.

Exhibit 2
Statistics: Quality of Data, Urban Public Transit, 1987-1990

	Quadrant			
	I	II	III	IV
Count	42	42	42	42
Range				
Minimum	6.6	7.5	3.0	6.4
Maximum	16.1	19.0	18.2	13.2
Mean	10.99	12.29	13.02	10.07
Variance	5.14	6.41	7.51	1.55
Standard Deviation	2.27	2.53	2.74	1.24

Data-quality tests indicate that two statistical conditions were satisfied. First, according to a frequencies analysis, each quadrant index contains data approximating a normal distribution. Second, three tests confirm that the quadrant indices are statistically different from each other in both means and variances. ANOVA shows significant differences in quadrant means (F value = 13.77 for four groups with three degrees of freedom). The F-test comparing the two quadrant indices having the greatest differences in variance indicates significance (F = 4.85 at the .05 level). A principal components analysis shows that the indices are essentially orthogonal; three quadrants were required to explain 94 percent of the variability.

Given these results, we concluded that the analysis of performance skewness employs near-normal, statistically significant data exhibiting high component independence.

For *performance emphasis*, Exhibit 3 reports an analysis showing *extremes* in quadrant variance among the agencies. Clusters of emphasis and de-emphasis vary in number and show which agencies distinctively lead and lag for each quadrant index. Most (69 percent) in the emphasis clusters are leaders in two quadrants (Los Angeles has three emphases). This pattern suggests that some quadrant perspectives are combined by some groups of agencies.

Exhibit 3
Quadrant Emphasis: Extremal Clusters, Urban Public Transit, 1987-1990

	Quadrant			
	I Organ./ Strategic	**II** Soc. Prog./ Strategic	**III** Organ./ Operations	**IV** Soc. Prog./ Operations
TOP-CLUSTER **AGENCIES** (emphasis)	(n = 4) Philadelphia Washington D.C. San Francisco Boston*	(n = 6) BART* Washington, D.C. Atlanta San Francisco Los Angeles Chicago	(n = 6) Los Angeles Houston Seattle* San Antonio* St. Louis Philadelphia	(n = 5) Chicago Houston Atlanta Los Angeles St. Louis
BOTTOM-CLUSTER **AGENCIES** (de-emphasis)	(n = 2) St. Louis Los Angeles**	(n = 4) Dallas Buffalo St. Louis Denver	(n = 2) Boston Washington, D.C.**	(n = 4) Dallas Boston Cleveland** Seattle**

*Appears in only one emphasis cluster.
**Appears in only one de-emphasis cluster.

For example, Philadelphia leads in the emphases on organization quadrants, while Chicago and Atlanta share dual emphases for social programs. San Francisco and Washington, D.C., share dual emphases in strategic quadrants, but Houston and St. Louis lead in both operational quadrants. Further, 38 percent of those in emphasis clusters are also found in de-emphasis clusters, suggesting that many depend on a performance tradeoff to achieve their emphasis leadership. In contrast to emphasis clusters, a duality pattern is less apparent in de-emphasis clusters. Sixty-seven percent of agencies here lag in only one quadrant.

For *paradox resolution*, the methodology calls for identifying paradoxes for the industry as a whole and then examining whether the individual agencies deal with them by either accepting the contradiction or resolving it by tradeoffs. Exhibit 4 reports the results of the sample-wide correlation matrix of the four quadrant indices. Of the six correlations, only two are significant at the .05 level. One is a positive relationship (r = .48) between the strategic quadrants, probably explained by the longer time horizons found in strategic management to work out differences jointly. The only significant paradox is

between the two organization quadrants (r = -.56), suggesting the complex relationships that make for contradictions between the long-term aspirations of strategic management and the immediate needs of operations (Boschken 1988).

Exhibit 4
Paradox Tradeoffs: Industry Pattern,
Urban Public Transit, 1987-1990

	Quadrant			
	I	II	III	IV
Quadrant I	1.000			
Quadrant II	.477*	1.000		
Quadrant III	-.563*	-.433	1.000	
Quadrant IV	-.217	.115	.225	1.000

Correlation Coefficients N = 42   Significance: * = .05

In transit, for example, strategic goals to gain prominence in the region (market penetration) and achieve high service consumption (load factor) typically require operating late model equipment (or a preference for a more expensive rail mode instead of buses) and shorter maintenance cycles to keep equipment shiny and clean. On a cost-per-unit basis, such emphasis on consumer satisfaction may be seen as incongruent with technical criteria of operations. Given the performance contradictions reflected by the negative correlation, one might conclude that most individual agencies must be dealing with the paradox in similar ways. The data as shown in Exhibit 5, however, do not support this conclusion.

Organized according to agency-performance rank for the two quadrants, clusters of agencies indicate a near-symmetrical distribution. Those in the tradeoff cluster favoring strategic performance each ranks in the top ten for this quadrant and the bottom ten for the operations quadrant. Of those accepting the paradox, most are near the median in both performances, suggesting that each is suboptimized to maintain the contradiction. Philadelphia is an exception, ranking near the top for both. Those in the tradeoff cluster favoring operations performance each ranks in the top eleven for this quadrant and in the bottom five for strategic performance.

Exhibit 5
Skewness Pattern: Paradox Resolution,
Urban Public Transit, 1987-1990

	Rank-Order Performances	
	Quadrant I	*Quadrant III*
AGENCY	Organization/ Strategic	Organization/ Operations
Paradox Tradeoff *Favoring Strategic*		
Washington, D.C.	3	41
San Francisco	2	36
Boston	4	42
Chicago	8	37
Contra Costa	10	31
Paradox Acceptance (no skewness)		
Philadelphia	1	6
Dallas	11	13
San Diego	19	18
Cincinnati	17	20
Norfolk	22	24
Paradox Tradeoff *Favoring Operations*		
St. Louis	42	5
Los Angeles	41	1
Orange County	40	11
Denver	39	10
Twin Cities	38	8

DISCUSSION: A STRATEGY FOR APPLYING MSPI IN RESEARCH

Through the multiple constituency framework of MSPI, performance is seen not through a single measure but in relative terms of multiple indices. Applied to transit, MSPI shows variances in two skewness variables. First, the extremal analysis showed that the agencies individually vary widely according to different emphases. Second, variances exist in the way transit agencies handle quadrant paradox. Some trade off in one direction, others trade off the opposite direction, and still others maintain acceptance for paradox.

The fact that MSPI provides a conceptual framework to scale statistically valid dependent variables may be intrinsically interesting, but one may query its value to the general study of public organizations. The answer is twofold. First, the model contributes a new avenue for researching the critical topic of agency bias in managing and distributing public resources to different constituencies. Most empirical work has been content either with applying cost/benefit analysis to individual policy issues and programs or with measuring agency performance by some pinnacle measure. MSPI goes further by spreading the focus on performance broadly across many perspectives to provide more usable information for management and political oversight in a metapolicy environment.

Thus, the rationale for using MSPI in performance measurement is in the metapolicy interdependencies symptomatic of virtually every public service area. In transit, for example, research interests heavily advocate the policy of privatization. This represents a shift away from preoccupation with social program issues to concerns of internal efficiency. With either focus, however, metapolicy interdependencies go unacknowledged and organizational analysis remains narrowed to single policy perspectives. For years researchers and policy analysts have talked around the politics of performance by arguing about what constitutes "good" performance and whether efficiency or effectiveness is a better measure. Disagreements over what constitutes the bottom line in public management and policy research allude to performance skewness without realizing that it raises an important question of its own. The fact remains: There is no bottom line for public organizations in an interdependent, plural society.

Should we not be underscoring this with research that incorporates skewness in the analysis of excellence? In urban transportation, for example, the mandate now exists to analyze performance with a metapolicy focus. Congress recently passed a pathbreaking law called the Intermodal Surface Transportation Efficiency Act of 1991 (U.S. Congress 1991). With far reaching implications for intergovernmental policy and management in metropolitan areas, the Act calls for an integration of transportation systems in "a unified, interconnected manner."

As part of its implementation, the Act requires (1) the development of a multiple performance model of "surface transportation system performance indicators"; and (2) the subvention of transportation funds to help in the augmentation of metapolicy relationships concerning transportation issues and polices related to the elderly and disadvantaged persons,

environmental quality, energy conservation, economic develop-
ment, international competitiveness, and others (U.S. Congress,
Title I, Section 2). To accomplish this, the Act contains a large
increase in funding for "university research and development
activities."

The second aspect of the model's value to the general
study of public organizations is that a set of related outcome
variables such as those structured by MSPI is useful if it can be
connected to causal processes. With MSPI, one ought to be able
to predict quadrant scores from polynomial equations of inde-
pendent variables. In this way performance skewness plays
into an old inquiry about what matters most in determining
policy outcomes (Robertson and Judd 1989, 61-71; Fried 1971;
Hrebiniak and Joyce 1985). Comprehensively, what managerial
and environmental variables explain the different performance
biases? Which determines them more?

In transit, does cause lie in such environmental factors as
demographics, urban economy, and land use patterns? If so,
certain of these environmental variables may bar agency man-
agement from pursuing objectives it might care about. Perhaps
agencies serving large, dense, and older metropolitan areas
with congested highways and more vital urban cores are able
to perform more for organization quadrants (I and III) than
agencies serving low density, sprawling, and auto-dominated
areas. The former may be better able to attract high patronage
at lower cost.

Does cause lie with the political structure of metropolitan
areas? For example many metropolitan areas have transit
systems operated by independent public authorities; others are
operated by departments of a city. In some areas transit meta-
policy is dominated by a system of overlapping authorities,
while in others a single agency enjoys virtual autonomy. Given
these external factors, how much cause lies within the purview
of management and the technologies it employs?

We have seen a large redirection of support for privatiza-
tion in urban services and a surge in emphasis on technical
solutions (for example, light rail in transit). Causal research
may eventually show that urban form, demographics, and poli-
tical structure make such across-the-board policies fruitless and
costly for some agencies. To address appropriate solutions, a
general research strategy needs to consider the relative magni-
tudes of management and environmental determinants. These
questions and others remain until research shifts to the equally
important issues raised by performance skewness.

APPENDIX A
Transit Measures

Individual measures of transit performance run into the hundreds, most of them focused on aspects of operations (UMTA 1988; APTA 1988; Fielding 1987; Perry and Babitsky 1986; Perry and Angle 1980; Altshuler 1979). Most are derived from data compiled by public transit organizations in compliance with Section 15 of the Urban Mass Transportation Act, as amended in 1974. In Exhibit A-1, transit performances for MSPI are mapped according to constituency goals. Although no conceptual limit exists on the number of measures to include, this study incorporated three into each quadrant, a total of twelve for the matrix.

Exhibit A-1
Constituency Goals and MSPI Matrix Measures:
Urban Public Transit, 1987-1990

Quadrant	Constituency	Constituency Goal	Fiduciary Agent	Primary Goal-Consistent Performance	Statistical Measure
I	senior management	domain presence: superior market share	direct*	market penetration	passenger trips/ district population
I	senior management	domain presence: production acclaim	direct*	load factor	passenger miles/ vehicle miles
I	senior management	resource acquisition	direct*	organization growth	% change in revenues, all sources
II	transit-dependent commuters	convenient access to metro econ activities	UMTA, state & local officials	mobility for transit-dependent	passenger miles/ service area-sq.mi.
II	nonworking poor	broad access to social activities & welfare services	UMTA, state & local officials	noncommute services	off-peak veh miles/ tot veh mi
II	regional, urban population	urban revitaliz & econ development	local & regional gov'ts & int grps	economic development contribution	ann captl invest / distr pop
III	production management	minimize transp costs	direct*	operations efficiency	oper exp / veh miles
III	maintenance management	minimize maint costs	direct*	maintenance efficiency	maint exp/ veh hours
III	financial & engineering management	minimize captl costs	direct*	system efficiency	op assets/ veh rev mi

APPENDIX A (Exhibit A-1)—continued

IV	transit laborers	high stand of living	organiz labor	wage yield	wage exp/ veh rev mi
IV	taxpayers	tax reduction	ballot props	subsidy value	veh hrs / op subsidy
IV	pedestrians & motorists	safety	UMTA	vehicle accidents	veh accid/ veh miles

*Constituency directly represents its interests.

Quadrant I performance is defined in terms of the organization's strategic positioning in the industry. The most common measure is market share, but for transit this requires knowing the total number of vehicle trips in a transit agency's district for all modes including autos. Such data are not routinely available or collected from a single source using a common methodology. With the lack of reliable market-share data, MSPI adopts instead "market penetration," which is also called by the industry "percent of population served." Although it is a less-direct measure of strategic performance, it measures an agency's ability to attract ridership from the district's population and reflects its relative market dominance.

A second quadrant I measure is "load factor," an indicator used in all passenger transportation industries. Load factor indicates how much the service is used and measures the average number of passengers riding a vehicle. The third measure is a macro indicator of resource acquisition. Organization growth measures revenue changes from combined sources and reflects an agency's year-to-year combined proficiencies in farebox recovery, intergovernmental grantsmanship, and secondary fee-for-service sources.

Quadrant II measures social effectiveness in reaching program objectives mandated by political authority. The first measure is mobility afforded the transit dependent, defined by UMTA as "access to desired destinations" (Rosenbloom and Altshuler 1979, 136). Reflecting a route system's connectivity in a network of dwellings and various economic activities, this measure combines geographical coverage and frequency (total vehicle miles driven on all routes) within a system's service area (in square miles). Service area covers the agency's urbanized tax base and is determined by an analysis of the 1990 census for each transit jurisdiction. An imperfect indicator, it is silent on whether route coverage and intensity are suitably aligned temporally and locationally with patterns of economic and social activity.

The second measure looks at services provided to noncommuting, transit-dependent riders. Many nonworking poor have widely dispersed origin and destination points and ride during off-peak hours when vehicles are less full. To encourage noncommuter riders, an agency would have to partially restructure its route system in off-peak periods to provide greater access to more areas (e.g., shift route emphasis outside commuter corridors). Measuring the extent of service provided to noncommuting clients, the indicator is defined as the number of off-peak vehicle miles driven as a percent of total vehicle miles.

The third measure captures the interests of a region's cities and special districts. As promoters of economic development, these governments seek the expenditure of transit resources for nontransit programs such as creation of jobs and inducement of private sector capital improvements for a regional population. Transit agencies often involve coordinated development, and they engage in construction along transportation corridors that provide positive externalities to the locale (Attoe 1988). The economic development indicator measures the level of an agency's capital investment program in terms of its district population. Although it is imprecise and indirect, spending more per capita on transit projects should increase the multiplier effect (e.g., enhance urban property values and improve access to jobs and retail activity).

Quadrant III focuses on performance achieved in operational efficiencies. In transit, this is divided according to operations (transportation department) efficiency, maintenance efficiency, and system efficiency. The first involves those costs associated with running the route system, the largest component being operators' labor costs. The second measure is maintenance costs compared with hours of maintenance-free operation. System efficiency measures the employment of capital assets in the production of output and includes only physical plant and equipment directly used in the system's operation.

APPENDIX A—continued

Quadrant IV measures effectiveness for contributing external stakeholders. Unionized employees desire, among other things, high wages. Wage yield therefore measures how much employees earn for the mileage they drive. Taxpayer revolts and elected officials have tempered union legitimacy and have broadened quadrant IV performances to include a subsidy value measure. This indicator reflects how much service is rendered per tax-subsidy dollar. Third, motorists and pedestrians are concerned about potential harm from vehicle accidents. Accident rates, therefore, indicate the comparative level of this externality.

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