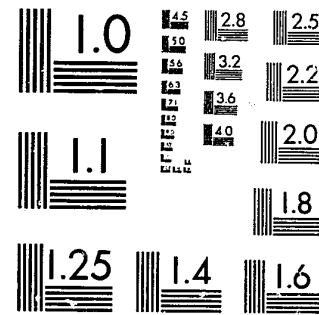National Criminal Justice Reference Service

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THREE PERSPECTIVES ON PERFORMANCE MEASUREMENT:

FUNDERS, PRACTITIONERS, AND RESEARCHERS

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Agency performance can have many facets. Important aspects or
dimensions of performance include both the quantity and quality of
output, the equity with which these outputs are distributed, how
efficiently these outputs are produced, what benefits result, and the
cost-effectiveness of the resulting benefits (Grizzle, 1981). This paper
looks at the extent to which funders, practitioners, and researchers
agree about the relative importance of these performance dimensions.

Why Learning the Relative Importance of Performance Dimensions Matters

Assessing overall agency performance by looking at individual
performance measures can be difficult. Agencies may vary in terms of how
well they perform on each dimension. Further, their performance on each
dimension may increase or decrease over time. Increasing performance on
one dimension can sometimes be at the expense of performance on another
dimension. For example, greater quantity of output may be achieved by
lowering output quality. Or improvements in efficiency may be to the
detriment of benefits to client groups. The picture becomes even more
complicated when one attempts to compare the performance of different
agencies.

To make it easier to compare performance over time or across
agencies, then, one would like somehow to combine multiple performance
measurements into a single indicator that summarizes an agency's overall
performance. Statistical models, such as the performance ratio and
linear programming approaches, provide methods for combining these
measurements. However, these models require that someone determine the

relative importance of the performance dimensions included in them. Thus, learning the relative importance of performance dimensions is an important step in measuring an agency's overall performance.

People may disagree about how important one performance dimension is compared to another. If people do in fact disagree, whose judgment about the relative importance of performance dimensions should be used when developing an overall measure of agency performance becomes an important question. We expect that a person's role might influence his/her perspective on performance measurement. For example, people who are responsible for allocating funds across programs might believe that cost-effectiveness is the most important dimension. People responsible for implementing programs, on the other hand, might believe that quality is more important than cost-effectiveness.

Research Method

To test this assumption, we elicited judgments about the relative importance of performance dimensions from individuals whose roles varied as follows: funders, researchers, and practitioners.

Several factors may affect the relative importance that people assign to different performance dimensions. We would hope that the most important determinant of assignments is the opinions that people actually hold. Other factors that may affect their assignment of relative importance include the method used to elicit their opinions and the way the task is presented to them (Hershey, Kunreuther, and Shoemaker, 1982). To minimize the influence of these other factors, we described the task to all three groups of respondents the same way and used the same method

for all three. We asked them all to think in terms of the same type of organization - a probation and parole agency.

Our aim in selecting a sampling frame was to query people who were both familiar with probation/parole agency operations and who would be expected to have an interest in assessing probation/parole agency performance. We hoped that restricting the sample to such people would increase the diligence with which they completed the survey instrument and decrease the percentage of individuals polled who actually had no opinion about the relative importance of performance dimensions.

A separate sampling frame was developed for each of the three groups that comprised the national sample. The practitioner sampling frame consisted of persons listed in the 1981 edition of the Directory of Probation and Parole Agencies, published by the National Council on Crime and Delinquency. The researcher sampling frame was constructed by selecting that subset of the American Society of Criminology membership list who gave an affiliation with a university or other research organization. We drew a random sample of 100 people from each of these sampling frames.

Two other sources provided the samping frame for funders. The National Association of State Budget Officers membership list included the names of the executive budget officers for the 50 states. The 1981 edition of the Book of the States, Supplement #2, published by the Council of State Governments, listed the legislative budget offices for the 50 states. We drew a random sample of 50 offices from the total of 100. We directed the survey instrument to the executive or legislative

analyst responsible for reviewing probation/parole agency budgets.

The response rate for the three groups was as follows:

      Funders -   41 respondents, or 82% of the sample

      Practitioners - 43 respondents, or 43%

      Researchers - 48 respondents, or 48%.

Because of the small size of the funders sample, we sent out one follow-up letter to people who had not responded within one month to our original request. We did not follow up nonrespondents in the practitioner and researcher groups.

Figure 1 shows the survey instrument used to elicit judgments about the relative importance of performance dimensions. This format facilitates using the analytic hierarchy process and corresponding statistics described by Saaty (1980) to analyze and interpret the survey results. The respondent indicates his/her preferences through a series of pairwise comparisons.

In a cover letter, respondents were told that the researcher was developing performance measures for probation/parole programs and wanted to identify the types of measures that people thought were most important for judging the adequacy of agency performance. They were told that the survey findings would be used to set priorities on which types of performance measures to develop and test first. Finally, they were asked to judge the relative importance from their perspective as budget analysts, practitioners, or researchers.

Respondents' Judgments

To analyze the data, each individual's response was set up as a 6 X

6 matrix. If for each cell the performance dimension in the row was more important than the dimension in the column, the absolute value of the number checked by the respondent was inserted in the cell. If instead the dimension in the column was rated more important, the reciprocal of the absolute value was inserted in the cell. The lower lefthand half of the matrix is therefore the reciprocal of the upper righthand half of the matrix. For illustrative purposes, one such matrix is reproduced in Table 1.

An estimate of the priority vector for each individual's response was obtained using method four suggested by Saaty (1980, p.19). This method consists of taking the geometric mean of the six elements in each row and normalizing the resulting vector.

To obtain group judgments about the relative importance of the six performance dimensions, we calculated the arithmetic mean for each of the six numbers in the individuals' priority vector. The resulting vector for each group is shown below:

Dimension	Funders	Practitioners	Researchers
Quantity	8% (.75)	11% (1.00)	6% (1.00)
Quality	19 (.47)	22 (.41)	21 (.52)
Equity	12 (.75)	16 (.62)	22 (.59)
Efficiency	13 (.46)	11 (.45)	10 (.80)
Benefit	27 (.44)	28 (.43)	28 (.50)
Cost-effective.	20 (.50)	12 (.58)	12 (.75)

The number in parentheses is the coefficient of variability, obtained by dividing the mean into the standard deviation.

All three groups indicated that benefit was the most important dimension and quantity of output was the least important. The two major differences are the greater importance that funders place upon cost-effectiveness compared to practitioners and researchers and the greater emphasis that researchers place upon equity. These differences seem reasonable because cost-effectiveness is the decision criterion that proponents of economic rationality advocate for allocating resources across agencies or programs (See, for example, Lewis, 1972). The researchers sampled come more from sociology and political science than economics and are therefore more concerned with who gets what services, a matter of equity, than with allocating resources on the basis of cost-effectiveness.

The coefficient of variability indicates the degree of homogeneity in individual judgments within each group. The smaller the coefficient, the greater is the consensus about the dimension. Both funders and practitioners have the most consensus about the importance of the quality, efficiency, and benefit dimensions. Researchers show the most consensus about the quality, equity, and benefit dimensions. Quantity is the dimension about which there is the least consensus about its importance.

To compare the priority vectors obtained for the three groups, we used the root mean square deviation recommended by Saaty (1980, p. 38). The equation for two vectors that have six dimensions is

$$\sqrt{\frac{1}{6}\sum_{i=1}^{6}(a_i-b_i)^2}$$

where a_i is the percentage of the ith dimension in vector a and b_i is the

percentage for the ith dimension in vector b. This root mean square deviation can range from 0 to 58. Zero represents identical vectors and 58 representes the maximum possible dissimilarity. Comparing the researchers and funders priority vectors, we find that the root mean square deviation is 5.5. The other pairs have slightly smaller root mean square deviations - 3.2 for researchers compared to practitioners and 4.1 for funders compared to practitioners.

Some people may wonder whether benefit received the highest rating because it sounds good in the abstract. We tried to avoid such a response by grounding the performance dimensions in specific measures and including these measures on the form each respondent filled in. We also looked to see how benefit measures fared relative to other measures in a national survey reported in another study (Grizzle and Minerva, 1982). In this other survey a majority in each of the three constituent groups rated three measures as relevant and important for all three agency profiles. All three were benefit measures. The benefit measures were not labeled "benefit" but were grouped under "outcomes of agency activities."

As an additional check on the validity of benefit being judged as the most important performance dimension, we reviewed the legislative appropriations hearings for two states. We reviewed the 1979 and 1981 hearings for the Florida Senate and House subcommitees that dealt with corrections and the 1981 North Carolina House and Senate appropriations subcommittees that dealt with corrections. Our approach was to transcribe each question that a legislator asked during these hearings.

We coded each question as either relating or not relating to performance. Of the 127 questions that the legislators asked corrections agency staff about performance, 38% were benefit measures. No other performance dimension contained as large a proportion of the performance questions.

Significance of Differences in Weights

In some respects the three constituent groups have a similar pattern of performance dimension weights. All three judge benefit and quality as being more important than efficiency and more than twice as important as quantity. Funders, however, judge cost-effectiveness to be more important than do the other two groups. Also, researchers judge equity to be more important than do the other two groups.

Are these differences large enough to have practical significance when using them? To better appreciate the effect that these differences might make when judging agency performance, we applied them to a set of performance measurements for each of five probation/parole agencies. The performance measures used to represent each performance dimension follow:

Quantity: Number of offenders supervised.

Quality: Percentage of referrals followed up.

Equity: Percentage of offender problems identified that resulted in referrals to obtain help.

Efficiency: Annual cost per offender supervised.

Benefit: Number of early and regular terminations as a percentage of total terminations.

Cost-effectiveness: Cost per successful termination.

The performance measurements for each agency were scaled so that the

best possible performance would be scored 100% and the worst possible would be scored 0%. Where there was no external standard to define "best" performance, the agency which performed best for a given dimension was scored 100% and the other four agencies were scaled to that imputed standard. Table 2 shows these performance scores for the five agencies.

Table 3 shows three overall performance scores for each agency, using in turn the weights provided by the practitioners, the funders, and the researchers. Each agency's overall score was obtained by multiplying each performance measurement by the group's respective weight relating to that performance dimension and summing the resulting products. Although there is some variation in each agency's performance score, depending upon which group's weights are applied, their rank order does not change. Regardless of which group's preferences about the relative importance of the performance dimensions is used, agency A performs best, C second best, B third best, D fourth, and E worst. It is also worth noting that the same rank order would obtain if all performance dimensions were weighted equally.

As a second exercise, we developed performance measurements for hypothetical agencies. We allowed these measurements to vary over a wider range than occurred for the five agencies whose performances are described above. For this second exercise, we used the performance weights of the two constituent groups that differed the most from each other - funders and researchers.

A random table provided the scores for each of 80 hypothetical agencies on each of the 6 performance dimensions. Each dimension's

performance was allowed to range from 100, representing 10% of optimum

performance, to 1000, representing 100% of optimum. To calculate an

overall performance score for each of the agency profiles, we multiplied

each dimension's score times each group's weights and summed the

products. For example, the overall performance score for agency profile

#1 using the researchers weights is 620:

Dimension	Weight		Score		Weighted Score
Quantity	1000	X	8%	=	80
Quality	200	X	19	=	38
Equity	900	X	12	=	108
Efficiency	400	X	13	=	52
Benefit	600	X	27	=	162
Cost-eff.	900	X	20	=	180
Total score					620

Applying the funders weights to these same dimension scores gives a total

performance score of 616 instead of 620.

Next we correlated the performance scores obtained by using the

funders weights with those obtained by using the researchers weights.

Figure 2 shows that there is a high, positive correlation between the two

sets of performance scores. The Pearson product moment correlation

coefficient is .93.

This high correlation again suggests that which group's weights are

used might not make much practical difference. To pursue this

possibility, we ranked the 80 agency profiles according to each set of

performance scores and compared the two rankings. Table 4 shows that the

differences in rank order range from 0 to 23. Profile #1, for example,

would be ranked 17th out of 80, based upon either the funders or the

researchers weights. Profile #26, on the other hand, would be ranked

first using the researchers weights but only 24th using the funders

weights. The mean difference in rank order for the 80 profiles is 8.

Next we looked at the mean difference in performance scores. Total

performance scores can range from 100 to 1000. The actual range for

these 80 profiles is from 214 to 851 when using the researchers weights

and 222 to 818 when using the funders weights. The mean difference

between the two sets of scores is 38.

We conclude that a small change in the total performance score is

enough to change the rank order. On the average a change of less than 4%

(38 points out of 1000) is enough to change the rank order by 8 places.

If such rankings were used to establish priorities among agencies for

purposes such as program expansion or cutback, the choice of whose

weights to use could materially affect the level of resources allocated

to a given agency.

Summary and Conclusion

We elicited from a sample of funders, researchers, and practitioners

their preferences about the relative importance of six dimensions related

to the performance of probation/parole agencies. These dimensions were

quantity of output, quality of output, efficiency, equity, benefit, and

cost-effectiveness. On some dimensions judgments across dimensions

resulted in similar rankings. Regardless of the type group, they

generally rated benefit and quality as being substantially more important

than quantity and efficiency. These findings suggest that research priority should be given to developing benefit and quality measures.

The greatest variation in importance ratings occurred for the equity and cost-effectiveness dimensions of performance. Researchers assigned 22% of the total weight to equity, while funders assigned only 12% to equity. Funders, on the other hand, assigned 20% of the total weight to cost-effectiveness, while researchers assigned only 12% to that dimension. These differences may be large enough to have practical significance when using them to aggregate performance scores on individual dimensions for purposes of ranking agencies or comparing their performance over time.

Whether they are large enough depends upon two factors:

(a) how much variation in performance actually occurs among the agencies being compared and

(b) how the overall performance measurements are used.

If the overall measurements are used to establish a rank order among agencies, then which group's weights were used would not matter if the variance in performance across agencies were similar to that for the five agencies sampled. If, however, actual variation were as great as that simulated for the eighty hypothetical agencies, then whether one used funder weights or researcher weights would make a difference in the rank order of the agencies.

Using the overall performance measurements instead of the resulting rank order of agencies could affect decisions even if the variation were no greater than that found in the five agencies described above. For

example, the overall performance score for the poorest performing agency is 44 when weighted according to the funder preferences and 61 when weighted according to practitioner preferences. If these measurements were the basis for reimbursing an agency under a performance contract, whose weights were used could have a substantial effect on the size of payment the agency would receive. If one wants to use the overall performance measurement for such a purpose, who should establish the weights therefore becomes an important question that merits further study.

Figure 1

SURVEY INSTRUMENT

WHICH PERFORMANCE DIMENSIONS ARE MOST IMPORTANT?

Agency performance is a multidimensional concept. The term "performance" can include such dimensions as quantity and quality of output, equity, efficiency, benefit and cost-effectiveness. Opinions differ about the relative importance of these dimensions as indicators of agency performance. Definitions of each dimension and related performance measures are listed below.

Quantity of output refers to the amount of an agency's direct products, i.e., the services rendered or regulations enforced.
Examples: Number of contacts made with offenders
   Number of investigations completed
   Number of offenders referred to community resources

Quality of output refers to how well the agency is operating and encompasses a number of attributes, including conformity to "good" practices, accuracy and timeliness of the work completed, the public's or the client's satisfaction with the service received.
Examples: % of offenders who receive the level of supervision to which they
    were assigned
   % of victims served by restitution program who are satisfied with
    the timeliness and adequacy of payment
   Average elapsed time between need identification and referral of
    offender to a community resource

Equity refers to how fairly services or the enforcement of regulations are distributed among people. Common ways of breaking down services in order to compare their distribution among different groups of offenders include age, race, sex, extent of need, severity of offense or length of term.
Examples: % of offenders needing help who are referred to community resources,
    broken down by race, age group and sex of offender
   % of offender problems identified for which help is obtained, broken
    down by whether obtaining help is a special condition of
    probation or parole
   Average elapsed time between need identification and referral to a
    community resource, broken down by length of offender's term

Efficiency refers to the cost per unit of output.
Examples: Average cost per investigation completed
   Average cost per office contact
   Average cost per referral

Benefit refers to the effect of what the agency does upon the offender or others in society.
Examples: # and % of offenders who complete their term without violating a
    condition of probation or parole
   # and % of offenders with drug or alcohol problems successfully rehabilitated
   # and % of victims granted restitution who receive the full amount due them

Cost-effectiveness refers to cost per unit of benefit.
Examples: Average cost of securing employment for an offender
   Average cost per alcoholic rehabilitated
   Average cost for supervision of each offender who successfully completes
    a term without violation

INSTRUCTIONS

Assume that your task is to determine the performance of a probation and/or parole agency. Use the matrix below to compare the importance of six performance dimensions as indicators of agency performance. Definitions of these dimensions appear on the lefthand side of this sheet.

Each row in this matrix compares two performance dimensions. For each row, check the column that most closely reflects your opinion of the importance of the performance dimension in the lefthand column compared with the performance dimension in the righthand column. For example, in the first row, a check in column +5 means that you believe quantity of output is strongly more important than quality of output. A check in column -3 means that quantity is moderately less important than quality. A check in column 1 means that the two performance dimensions are of equal importance as indicators of agency performance.

	Absolutely more important +9	Very Strongly more important +7	Strongly more important +5	Moderately more important +3	Equally important 1	Moderately less important -3	Strongly less important -5	Very Strongly less important -7	Absolutely less important -9	
Quantity	—	—	—	—	—	—	—	—	—	Quality
Quantity	—	—	—	—	—	—	—	—	—	Equity
Quantity	—	—	—	—	—	—	—	—	—	Efficiency
Quantity	—	—	—	—	—	—	—	—	—	Benefit
Quantity	—	—	—	—	—	—	—	—	—	Cost-effectiveness
Quality	—	—	—	—	—	—	—	—	—	Equity
Quality	—	—	—	—	—	—	—	—	—	Efficiency
Quality	—	—	—	—	—	—	—	—	—	Benefit
Quality	—	—	—	—	—	—	—	—	—	Cost-effectiveness
Equity	—	—	—	—	—	—	—	—	—	Efficiency
Equity	—	—	—	—	—	—	—	—	—	Benefit
Equity	—	—	—	—	—	—	—	—	—	Cost-effectiveness
Efficiency	—	—	—	—	—	—	—	—	—	Benefit
Efficiency	—	—	—	—	—	—	—	—	—	Cost-effectiveness
Benefit	—	—	—	—	—	—	—	—	—	Cost-effectiveness

Please check the category that most closely describes the position you hold:
___criminal justice practitioner   ___researcher

___fiscal or budget analyst

.14

Table 1

ILLUSTRATIVE MATRIX CONSTRUCTED FROM
AN INDIVIDUAL'S SURVEY RESPONSE

Performance Dimension	Quantity	Quality	Equity	Efficiency	Benefit	Cost-Effect.
Quantity	1	3	5	1/3	7	1/3
Quality	1/3	1	3	1/5	3	1/5
Equity	1/5	1/3	1	1/5	1	1/7
Efficiency	3	5	5	1	3	1
Benefit	1/7	1/3	1	1/3	1	1/7
Cost-Effect.	3	5	7	1	7	1

Table 2

Performance Measurements for Five Agencies

Performance Measure	Agency				
	A	B	C	D	E
Number of offenders supervised	91%	72%	67%	100%	53%
Percentage of referrals followed up	89	84	57	74	99
Percentage of offender problems identified that resulted in referrals to obtain help	59	71	93	87	72
Annual cost per offender supervised	100	60	76	79	33
Number of early and regular terminations as a percentage of total terminations	90	88	96	54	55
Cost per successful termination	100	58	81	47	20

Table 3

Comparison of Overall Performance Scores for Five Agencies,
Applying Weights Elicited from Three Constituent Groups

Performance Dimension	Performance Measurement	Performance Score, Weighted by:		
		Practitioners	Funders	Researchers
Agency A				
Quantity	91%	.10	.07	.05
Quality	89	.20	.17	.19
Equity	59	.09	.07	.13
Efficiency	100	.11	.13	.10
Benefit	90	.25	.24	.25
Cost-effectiveness	100	.12	.20	.12
Overall performance score		87%	88%	84%
Agency B				
Quantity	72%	.08	.06	.04
Quality	84	.18	.16	.18
Equity	71	.11	.09	.16
Efficiency	60	.07	.08	.06
Benefit	88	.25	.24	.25
Cost-effectiveness	58	.07	.12	.07
Overall performance score		76%	75%	76%
Agency C				
Quantity	67%	.07	.05	.04
Quality	57	.13	.11	.12
Equity	93	.15	.11	.20
Efficiency	76	.08	.10	.08
Benefit	96	.27	.26	.27
Cost-effectiveness	81	.10	.16	.10
Overall performance score		80%	79%	81%
Agency D				
Quantity	100%	.11	.08	.06
Quality	74	.16	.14	.16
Equity	87	.14	.10	.19
Efficiency	79	.09	.10	.08
Benefit	54	.15	.15	.15
Cost-effectiveness	47	.06	.09	.06
Overall performance score		71%	66%	70%
Agency E				
Quantity	53%	.06	.04	.03
Quality	99	.22	.19	.21
Equity	72	.12	.09	.16
Efficiency	33	.04	.04	.03
Benefit	55	.15	.04	.15
Cost-effectiveness	20	.02	.04	.02
Overall performance score		61%	44%	60%

FIGURE 2

CORRELATION OF PERFORMANCE SCORES, BASED ON RESEARCHERS VS. FUNDERS WEIGHTS,
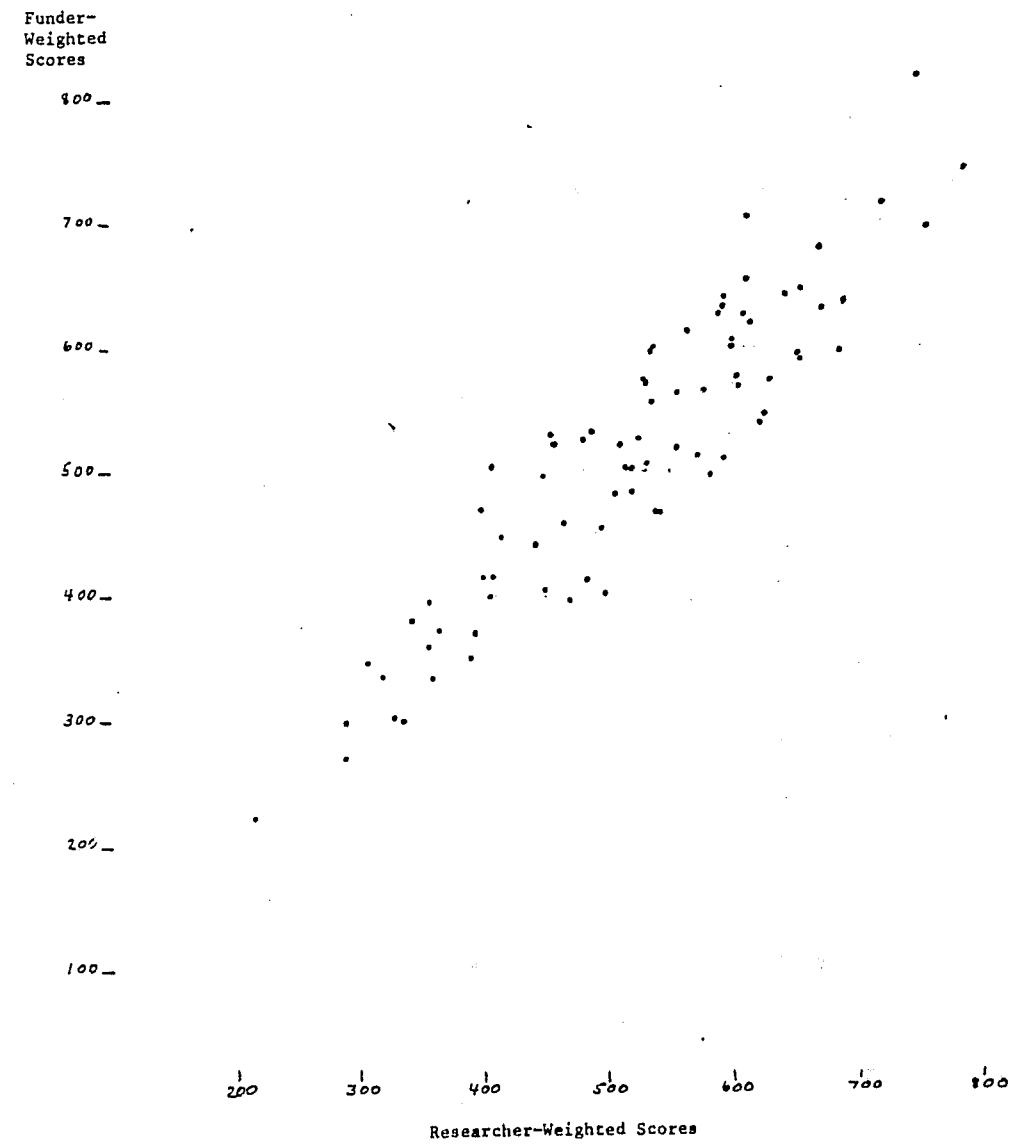FOR HYPOTHETICAL AGENCY PERFORMANCE PROFILES

Table 4

DIFFERENCES IN RANK ORDER AND OVERALL PERFORMANCE SCORES
OF 80 HYPOTHETICAL AGENCY PROFILES,
USING RESEARCHERS WEIGHTS VS. FUNDERS WEIGHTS

Profile	Rank Order			Performance Score		
	Researcher-Weighted	Funder-Weighted	Difference	Researcher-Weighted	Funder-Weighted	Difference
1	17	17	0	616	620	−4
2	40	22.5	+17.5	533	597	−64
3	48	53	−5	506	481	+25
4	11	25	−14	655	590	+65
5	27	13	+14	592	633	−41
6	.50	58	−8	493	453	+40
7	5	1	+4	750	818	−68
8	9	14	−5	672	630	+42
9	74	76	−2	335	304	+31
10	8	21	−13	685	598	+87
11	33.5	42	−8.5	556	519	+37
12	3	3	0	785	743	+42
13	45	46.5	−1.5	520	503	+17
14	32	18	+14	564	613	−49
15	52	63	−11	483	414	+69
16	33.5	32	+1.5	446	563	−7
17	4	6	−2	757	697	+60
18	22	26	−4	604	578	+26
19	66	54	+12	399	469	−70
20	77	73	+4	306	347	−41
21	25	44	−19	594	510	+84
22	49	48	+1	497	502	−5
23	70	68	+2	363	373	−10
24	31	43	−12	571	512	+59
25	53	39	+14	479	525	−46
26	1	24	−23	651	593	+58
27	29	15.5	+13.5	590	627	−37
28	7	12	−5	691	637	+54
29	28	50.5	−22.5	582	497	+85
30	72	70	+2	356	360	−4
31	6	4	+2	720	716	+4
32	14.5	34	−19.5	624	546	+78
33	47	41	+6	511	521	−10
34	23.5	20	+3.5	599	600	−1
35	14.5	35	−20.5	624	540	+84
36	68	69	−1	393	372	+21
37	79	78	+1	289	300	−11
38	64	65	−1	405	400	+5
39	76	74	+2	319	337	−18
40	20	15.5	+4.5	600	627	−18
41	16	9	+7	617	653	−36
42	78	79	−1	289	271	+18
43	44	52	−8	521	483	+38
44	51	36	+15	488	531	−43
45	73	67	+6	342	379	−37

Table 4 (continued)

Profile	Rank Order			Performance Score		
	Researcher-Weighted	Funder-Weighted	Difference	Researcher-Weighted	Funder-Weighted	Difference
46	54	66	-12	468	398	+70
47	35	55	-20	542	468	+74
48	10	7	+3	671	679	-8
49	55.5	37	+18.5	465	530	-65
50	69	72	-3	391	351	+40
51	63	46.5	+16.5	408	503	-95
52	75	77	-2	329	303	+26
53	57	40	+17	457	522	-65
54	26	11	+15	593	640	-47
55	36.5	29	+7.5	539	572	-33
56	2	2	0	829	775	+54
57	42	27.5	+14.5	530	573	-43
58	65	62	+3	401	415	-14
59	58	64	-6	449	405	+44
60	59	50.5	+8.5	447	497	-50
61	23.5	19	+4.5	599	606	-7
62	39	33	+6	534	555	-21
63	62	61	+1	408	418	-10
64	55.5	57	-1.5	465	459	+6
65	61	60	+1	414	449	-35
66	13	27.5	-14.5	631	573	+58
67	21	30	-9	607	569	+38
68	41	45	-4	532	505	+27
69	38	22.5	+15.5	535	597	-62
70	36.5	56	-19.5	539	467	+72
71	67	71	-4	397	355	+42
72	12	10	+2	641	641	0
73	30	31	-1	577	567	+10
74	46	49	-3	517	500	+17
75	71	75	-4	358	335	+23
76	80	80	0	214	222	-8
77	18	5	+13	612	704	-92
78	43	38	+5	524	526	-2
79	60	60	0	442	440	+2
80	19	8	+11	610	654	-44

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