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EVALUATING ECONOMIC PERFORMANCE IN FOOD RETAILING

by

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The authors report the results of a study measuring shopper attitudes about food specials merchandising and food retailing performance.

"No man in his senses would want his daughter to marry an economic man, one who counted every cost and asked for every reward, was never afflicted with mad generosity or uncalculating love, and who never acted out of a sense of inner identity and indeed had no inner identity even if he was occasionally affected by carefully calculated considerations of benevolence or malevolence. The attack on economics is an attack on calculatedness and the very fact that we think of calculating as cold suggests how exposed economists are to romantic and heroic criticism." (3, p.10)

Introduction

Research results presented in this paper are based on a 1971 sample of food shoppers and supermarkets in the Columbus, Ohio, market area. Twenty-one supermarkets and 1,385 food shoppers participated in the study. The stores were drawn from the top eight firms (four corporate and four affiliate) and represented, according to one source, over 70 percent of retail grocery sales in the Columbus metropolitan area in 1971 (5, p.53).

The primary object of the effort reported here was to attempt to measure

food retailing performance as applied to the merchandising of newspaper-advertised specials. This presented certain difficulties at the interface between theory and reality, and led to conceptual and methodological interpretations that must lie somewhere between error and insight. The purpose of this paper is to share those interpretations.

Analysis

Shopper attitudes about food specials merchandising are summarized in Table 1. They are based on a 1-to-7 increasing preference response scale. Note that responses are classed by the firms which shoppers patronized at the time shopper responses were recorded. These responses are not, however, evaluations of store or firm performance. They are merely the opinions of shoppers encountered in stores of each firm relating to the seven merchandising variables specified in Table 1.

Table 2 summarizes actual merchandising conduct of firms for these same merchandising variables, based on observations and measurements made by a research team visiting each store and distributing consumer response questionnaires to shoppers. The team recorded the percent of items featured by newspaper food ads that week which were identified by the presence of (1) in-store signs in three departments, and (2) specials displays in two departments; (3) the amount of fat on meat specials,

and (4) quality of meat specials. The last two measures were taken by student members of the Ohio State University meats judging team.

Table 3 presents a comparison of shopper opinions recorded in Table 1 and firm merchandising conduct recorded in Table 2. Firm ranks which emerge from this comparison are based, therefore, not only on actual firm conduct but on the degree to which shopper expectations were matched by merchandising conduct; firms with conduct exceeding preferences ranked high in performance (Table 3), and those with conduct lower than expressed preferences ranked low.

Table 4 provides, in part, a summary of Tables 1 through 3. But an added feature incorporated in the table is the authors' attempts to alter the rankings achieved in Tables 1-3 by employing added information (such as indices of relative rankings) while continuing to employ the basic conceptual approach. What the authors wish to demonstrate by this approach is that the rankings enjoy a certain inherent validity and are not simply the coincidental consequence of the manipulative device that happens to be chosen. Finally, in Table 4, a comparison is made, where data were available, with sales per square foot, the customary performance criteria widely employed in the trade. Explanatory footnotes are appended to the table.

Limitations

Because the object of this article is to suggest a means by which performance comparisons may be derived, certain exclusions have been made and some of them are important. For example, comparisons recorded in Table 3 are confined to those merchandising factors most amenable to precise measurement. However, some of these factors are not

necessarily the factors which shoppers had regarded as having the greatest impact on their shopping patterns. Department cleanliness, for example, was reported by shoppers as an important consideration, yet that merchandising factor is not included here because the authors could think of no means by which comparative cleanliness between stores could be objectively appraised. So the article has a flavor of precision which it does not deserve; partly because precision in measuring significant merchandising factors may be difficult to obtain and partly because the whole notion of precision in this case may be more illusory than real.

There is another difficulty with the approach: It can be argued that shopper preferences and merchandising conduct as measured here are not really directly comparable because shopper preferences which were solicited were not focused specifically on the stores in which the shoppers were encountered and received their questionnaires. But based on the method which was used, however, it is possible to conclude something like this: "If the samples were representative of supermarkets and supermarket shoppers in the Columbus metropolitan area, then Firm X patrons registered some of the highest shopper expectations in town, but Firm X was not the best performer in town on seven factors measured during three visits in 1972."

Results

Both an intensity and a consistency of shoppers preferences can be detected: The intensity is indicated by preference response on the 1-7 scale, and the consistency of this feeling is indicated by the spread or lack of spread in preference level (Table 1). Differences in level which are recorded in Table 1, it should be noted, are recorded only where a t-test (.05 level) has shown a significant difference in preference response

to actually exist. Hence, although there are eight firms and eight possible levels of response, no more than five significantly different levels actually appear in Table 1.

Variation in consumer preference is apparent both among firms and among merchandising variables. For example, Firm H shoppers expressed consistently lower response levels than did Firm F or Firm G shoppers. There was a relatively wide variation of opinion among shoppers about the value of grocery specials displays, but a more uniform and higher level of importance was attached to meat quality.

In terms of actual merchandising procedures observed by the research team the most consistently high conduct over the entire range of seven merchandising variables was found in Firms B, G, and H (Table 2). Within given variables, the most consistent conduct was related to fat levels and meat quality. Conduct varied most widely in grocery departments, with regard to both specials signs and specials displays.

It is apparent in Table 1 and Table 2 that variation or consistency in consumer preferences about merchandising variables tends to be associated with variation or consistency in actual merchandising conduct among grocery firms.

The impact of these relationships on overall performance ranks among grocery firms is examined in Table 3, which ranks the eight sampled firms according to how their conduct matched relative consumer expectations.

Firms ranked high in performance if conduct exceeded shopper expectations, or low if conduct failed to match expectations. Hence, two stores of equal actual merchandising procedures

could rank differently in performance depending on the attitudes of the consumers they served. Indeed, inferior merchandising by a firm serving indifferent shoppers could result in a higher performance ranking than moderately alert merchandising by a firm serving highly expectant shoppers.

This seems to have occurred in some cases. For example, in terms of actual merchandising conduct Firms F and H ranked fifth and third respectively (sum of ranks, Table 2). But Firm F shoppers had the highest expectations of the entire shopper sample, and Firm H shoppers were among the least critical. Hence, Firm H emerged with the top performance rank in Table 3, as much because of the low level of shopper expectations as because of the merit of its actual conduct, and Firm F fell to the bottom rank largely because its shoppers were uniquely hard to please.

The highest actual conduct on the seven measured variables was found in Firm G, and the lowest in Firm D (Table 2). But high expectations among Firm G shoppers lowered the overall rank of Firm G to a share of fourth place, and relatively lower shopper expectations permitted Firm D to avoid the lowest rank (Table 3).

Conclusions

The value of such information lies in its usefulness in helping firms increase their sensitivity to shopper expectations. The notion of "value" rests, further, on the premise that "good" performance results when firm conduct is closely matched to shopper expectations. This may not be true; a proposition which is explored in the implications that follow. But the information may be helpful in identifying two types of difficulty: (1) specific areas where merchandising is poor, and (2) instances where good merchandising conduct is

unappreciated by shoppers. Merchandising improvements would appear to be warranted in the first case, and improved public relations in the second.

Firm G in this sample, for example, might benefit from an ad program emphasizing its grocery signs and displays and the close trim on its meats. Firm F might consider increasing its use of signs and displays, particularly in the grocery department. Also, within the limits prescribed by firm policy, it might be wise to allow some latitude to individual store managers to vary merchandising emphasis in accord with the expectations of shoppers in specific stores.

In all cases, performance evaluated should not be confined to measured variables mentioned here, but should include others known to management or identified in this or other studies as important considerations.

Some Implications

In the Trinity of Structure-Conduct-Performance, Structure, the literature shows, is easiest to content with; Conduct endures an indeterminate status, and Performance is most enjoyable to talk about. Scherer, differentiating himself from Bain, dwells briefly on Bain's omission of Conduct in a tendency to span a Structure-Performance chasm, and labels Bain a Structuralist (for reasons Scherer respects rather than decries). By comparison, Scherer finds his own investigative strength in attacking Structure-Performance associations by focusing "on the business conduct which spans those phenomena", and his own work to be that of a behaviorist (8, p.6).

Still, it is acceptable to conform to Bain's own definitions of the terms that are used: "Market conduct refers to the patterns of behavior that enterprises follow in adapting or adjusting

to the markets in which they sell (or buy)" (1, p.9), although, following a persuasive Galbraithian serve, we would be inclined to confine that definition to markets of pure or monopolistic competition (4, Chapters 6-17). The Bainsian definition of conduct has nevertheless been the definition to which we have attempted to adhere in trying to understand what our data have to tell us in our presentation here.

Also, and a point of much of this, is our adherence to the accepted opening definition of Performance as found in Bain:

"Market performance encompasses the strategic end results of the market conduct of sellers and buyers. For sellers it is measured by their adjustments to the effective demands and for their outputs; for buyers by their adjustments to the supply conditions for the goods they purchase. It is the crucial indicator of how well the market activity of firms has contributed to the enhancement of general material welfare." (1, p. 372)

Yet how this "crucial indicator" shall be measured remains more a matter of speculation and conjecture than of measurement accomplishment.

The authors are not persuaded that the discipline of economics is as favorably prepared to measure performance as its practitioners are prepared to favorably evaluate their individual capacities to try. Part of the problem is found in the discipline, and part in its practitioners. Some of the difficulty lies in the desire of economics to be a science. It is an important difficulty because it causes economics to avoid as a threat to its lust for science those demands for attention that cannot readily be met by the approved approaches to objectivity. There are aspects of performance that are not yet ready to receive the approved

approaches. Hence these get discussed as intellectual considerations, a fire-side activity, but not seriously confronted where it is us or them.

The difficulties, in a phrase, lie in the discipline, in its practitioners, and in the bounds of a subject, which transcend the conventional disciplinary limits. Permit us one or two illustrations in order that we may proceed toward our punch line:

We addressed the limitations of the discipline in an opening quote from Boulding and will return to Boulding when we close. Let us now acknowledge one professor's view of his colleagues as practitioners:

"There are men charged with the duty of examining the construction of the plants, animals and soils which are the instruments of the great orchestra. These men are called professors. Each selects one instrument and spends his life taking it apart and describing its strings and sounding boards. This process of dismemberment is called research. The place for dismemberment is called a university.

"A professor may pluck the strings of his own instrument, but never that of another, and if he listens for music he must never admit it to his fellows or to his students. For all are restrained by an ironbound taboo which decrees that the construction of instruments is the domain of science, while the detection of harmony is the domain of poets." (6, p. 153)

But a tedious question arises: Is not the desire to measure performance an aspiration to detect harmony? Performance appeals to poetic lust, and gives science a guilty conscience;

perhaps even a dubious reputation. A prudent science might not engage in construction of instruments such as these, and the attempt might be left to those of its members who had the least to lose.

Then, also, we feel burdened, even by Bain's definition of Performance "...the strategic end results of the conduct of sellers and buyers..." This sort of definition assumes much about Economic Man and the very definition of the subject matter. The difficulty is particularly distressing when one aspires to performance-conclusions in the retail market place, especially in the retail food market for convenience goods, where one of the parties to the "end results", the buyer, we are increasingly told, may not be overly much concerned about the economics of satisfaction maximization, for convenience goods at least (7, pp. 16-19, for example).

We should measure performance "end results" against the judgments of these participants in the market place, particularly when their purchases of abundant, habitual, inexpensive convenience items are based as much on habit and whim as on "carefully calculated considerations of benevolence or malevolence?" On one occasion, quoting Will Rogers, Boulding recorded Rogers' observation that: "...the trouble isn't what people don't know, it's what they do know that isn't so..." (2, p.1). The man from Oklahoma was appreciated and enjoyed for the astuteness of his humor, and it seems to apply as well today to retail grocery buyers as to any other average citizen of the republic. This judgment -- this certain knowledge of what isn't so -- this is a basis for forming performance measures and offering policy pronouncements?

Consider the following conjectural possibilities, drawn from the content of Tables 1-3:

Case A

Range of Preferences: 1 2 3 4 5 6 7 8
Range of Conduct: 1 1 1 1 1 1 1 1

Case B

Range of Preferences: 1 1 1 1 1 1 1 1
Range of Conduct: 1 2 3 4 5 6 7 8

The resultant variation in Performance would be the same in either case. But would the desired corrections be the same; the policy proposals as easily rendered either way? Much, it seems, would depend on the vantage point of the disciplinary definition, on the urgencies of efficiency or on the credibility of either buyer and seller conduct rationale. It seems not unreasonable to suppose that, in much retailing at least, it would be the buyer who would be obliged to find the proof that would yield his case a hearing.

Finally, we would like to return to Boulding: In his discussion of the criticisms of economics, quoted in our opening paragraph, he is persuasive in his plea that calculated measurement does not exhaust the decision-making capacities of man, nor adequately explore the labyrinths of man himself. He refers to a non-economic sort of man, one whose existence is founded in subscription to a "heroic ethic" in which "the decision-maker elects something, not because of the effects it will have, but because of what he is; that is, how he perceives his own identity" (3, p.9). Surely, it seems to us, this serves as well to describe the model supermarket shopper as does the classical notion of an economic man. For our purposes, Boulding begins drawing his argument to a close in a manner that is entirely fitting for our present needs:

"My personal view is that, especially at his present stage of development, man requires both heroic and economic elements in his institutions, in his learning processes, and in

his decision-making and the problem of maintaining them in proper balance and tension is one of the major problems of maturation, both of the individual person and of societies. Economic man is a clod, heroic man is a fool, but somewhere between the clod and the fool, human man, if the expression may be pardoned, steers his tottering way." (3, p. 10)

The topic of his essay was Economics as a Moral Science". It has been our experience that, as Boulding warned, there lies in that title almost a contradiction of terms. We feel fortunate in supposing that the contradiction is not complete, and would like to agree that there should be no contradiction at all. But there is one.

We have attempted to report here how we approach some of the imponderables we encountered at that interface in the Moral Science where economics and non-economics are in confrontation. Again, we assert, we are not persuaded that economics is yet as well prepared to approach the measurement of performance as it would like to be, or frequently supposes itself to be.

PREFERENCE

TABLE 1: Shopper Preference Responses and Levels for Seven Food Specials Merchandising Variables Used in Eight Retail Grocery Firms, Columbus, Ohio, April, 1972*

Seven Merchandising Variables	Retail Grocery Firm							
	A	B	C	D	E	F	G	H
<u>Meat Specials Signs</u>								
Number Responding	108	121	83	74	98	160	140	81
Preference Response	4.69	5.53	4.66	4.78	4.76	5.56	5.39	5.20
Preference Level	3	1	3	3	3	1	2	2
<u>Produce Special Signs</u>								
Number Responding	114	121	91	76	107	156	150	77
Preference Response	5.10	4.88	4.66	5.09	5.11	5.60	5.39	4.87
Preference Level	2	2	2	2	2	1	1	2
<u>Grocery Specials Signs</u>								
Number Responding	126	112	90	86	105	166	167	87
Preference Response	5.09	4.97	4.46	5.16	5.01	5.78	5.33	4.69
Preference Level	2	2	3	2	2	1	2	3
<u>Produce Specials Displays</u>								
Number Responding	98	108	81	62	85	140	121	66
Preference Response	4.74	4.58	4.58	4.60	4.66	5.44	5.93	4.52
Preference Level	3	3	3	3	3	1	2	3
<u>Grocery Specials Displays</u>								
Number Responding	122	99	90	79	97	154	162	89
Preference Response	4.85	4.57	4.28	4.84	4.61	5.65	5.17	4.84
Preference Level	3	4	5	3	4	1	2	3
<u>Amount of Fat</u>								
Number Responding	116	123	78	69	100	155	134	82
Preference Response	4.67	5.74	5.64	5.12	5.16	5.39	5.43	4.56
Preference Level	3	1	1	2	2	1	1	3
<u>Meat Specials Quality</u>								
Number Responding	119	126	83	77	109	165	142	85
Preference Response	5.53	5.98	6.03	5.81	5.16	5.90	5.92	5.24
Preference Level	2	1	1	1	3	1	1	3

* Shopper preferences based on a 1 to 7 response scale, 7 highest. Tests for significant difference (.05 level) of performance level resulted in performance levels as shown instead of from 1 to 7 as apparent response differences would indicate.

Source: Survey data.

CONDUCT

TABLE 2: Firm Merchandising Conduct and Levels for Seven Food Specials Merchandising Variables Used in Eight Retail Grocery Firms, Columbus, Ohio, April, 1972.

Seven Merchandising Variables	Retail Grocery Firm							
	A	B	C	D	E	F	G	H
<u>Meat Specials Signs</u>								
Total Possible	462	134	74	116	141	101	134	131
Percent Actual	17.3	78.4	44.6	37.1	80.1	42.6	41.8	47.3
Merchandising Level	3	1	2	2	1	2	2	2
<u>Produce Specials Signs</u>								
Total Possible	143	67	34	59	81	57	32	24
Percent Actual	60.1	85.1	64.7	35.6	96.3	74.5	90.6	100.0
Merchandising Level	2	1	2	3	1	2	1	1
<u>Grocery Specials Signs</u>								
Total Possible	781	509	187	552	637	307	240	185
Percent Actual	24.6	38.5	13.9	24.3	33.4	39.4	62.9	54.6
Merchandising Level	5	3	6	5	4	3	1	2
<u>Produce Specials Displays</u>								
Total Possible	143	67	34	59	81	51	32	24
Percent Actual	13.3	17.9	5.9	3.4	1.2	23.5	3.1	8.3
Merchandising Level	1	1	2	2	2	1	2	2
<u>Grocery Specials Displays</u>								
Total Possible	781	509	187	552	637	307	240	185
Percent Actual	22.0	27.3	25.1	16.7	17.3	11.7	51.3	50.8
Merchandising Level	2	2	2	3	3	4	1	1
<u>Amount of Fat</u>								
No. Observations	182	80	37	45	76	71	84	86
Fat Rank*	3.84	4.04	3.89	3.73	3.87	3.93	4.21	3.69
Merchandising Level	2	2	2	2	2	2	1	2
<u>Meat Specials Quality</u>								
No. Observations	271	114	60	68	126	86	130	107
Quality Rank*	4.12	4.21	4.12	3.99	4.10	4.09	4.05	3.84
Merchandising Level	1	1	1	1	1	1	1	2

* 1 to 5 desirability scale; 5 most desirable. Tests for significant differences (.05 level) of actual performance yielded merchandising levels as shown instead of from 1 to 5 as observed differences would indicate.

Source: Survey data.

PERFORMANCE

TABLE 3: Firm Performance Scores and Levels on Seven Specials Merchandising Variables in Eight Retail Grocery Firms, Columbus, Ohio, April, 1972

Seven Merchandising Variables	Retail Grocery Firm							
	A	B	C	D	E	F	G	H
<u>Meat Specials Signs</u>								
Table 1 minus Table 2*	0	0	+1	+1	+2	-1	0	0
Performance Level	3	3	2	2	1	4	3	3
<u>Produce Specials Signs</u>								
Table 1 minus Table 2	0	+1	0	-1	+1	-1	0	+1
Performance Level	2	1	2	3	1	3	2	1
<u>Grocery Specials Signs</u>								
Table 1 minus Table 2	-3	-1	-3	-3	-2	-2	+1	+1
Performance Level	4	2	4	4	3	3	1	1
<u>Produce Specials Displays</u>								
Table 1 minus Table 2	+2	+2	+1	+1	+1	0	0	+1
Performance Level	1	1	2	2	2	3	3	2
<u>Grocery Specials Displays</u>								
Table 1 minus Table 2	+1	+2	+3	0	+1	-3	+1	+3
Performance Level	3	2	1	4	3	5	3	1
<u>Amount of Fat</u>								
Table 1 minus Table 2	+1	-1	-1	0	0	-1	0	+1
Performance Level	1	3	3	2	2	3	2	1
<u>Meat Specials Quality</u>								
Table 1 minus Table 2	+1	0	0	0	+2	0	0	+1
Performance Level	2	3	3	3	1	3	3	2
<u>All Variables</u>								
Sum of Scores	+2	+3	+1	-2	+5	-8	+2	+8
Performance Rank	4	3	5	6	2	7	4	1

* Row 3, Table 2 (merchandising level) is subtracted from row 3, Table 1 (shopper preference level).

Source: Preference and merchandising levels, Table 1 and Table 2.

ALTERNATIVES

TABLE 4: Alternatives -- Variation in Rank Associated with Variation in Measurement Method.

Measurement	Row	Retail Grocery Firm							
		A	B	C	D	E	F	G	H
TABLE 1: Preference									
Sum of Levels	1	18	14	18	16	19	7	11	19
Preference Rank	2	5	3	5	4	6	1	2	6
Index of Levels (a)	3	39	50	39	44	37	100	64	37
Preference Rank	4	5	3	5	4	6	1	2	6
TABLE 2: Conduct									
Sum of Levels	5	16	11	17	18	14	15	9	12
Conduct Rank	6	6	2	7	8	4	5	1	3
Index of Levels (a)	7	56	82	53	50	64	60	100	75
Conduct Rank	8	6	2	7	8	4	5	1	3
TABLE 3: Performance (b)									
Sum of Scores	9	+ 2	+ 3	+ 1	- 2	+ 5	- 8	+ 2	+ 8
Performance Rank (b)	10	4	3	5	6	2	7	4	1
Row 2-6+4-8 (c)	11	- 1	+ 1	- 2	- 4	+ 2	- 4	+ 1	+ 3
Performance Rank	12	4	3*	5	6*	2	6*	3*	1
Row 7-3 (d)	13	+17	+32	+14	+ 6	+27	-40	+36	+38
Performance Rank	14	5*	3	6	7	4*	8	2*	1
Sales/Sq. Foot (e)	15	3	1	2	4				

(a) Rather than a simple ranking, an index of the extent to which (in Row 2, for example) all preferences stood in relation to those expressed by shoppers in Firm F, or (as in Row 7) the relationship of store conduct by each firm relative to Firm G. Hence, Rows 3 or 7 do nothing to alter the ranks expressed in Rows 2 and 6. They simply provide additional information like (to choose an illustration) elasticities add information to the notion of demand functions. The indices are calculated by dividing the first-ranking sum of levels (7 in Row 1, for example) by the sums of each of the other levels in the row.

(b) These are the bottom two rows from Table 3.

(c) The object here is to allow the new information generated by Rows 3 and 7 to exert any impact they may have in altering performance ranks. Any resultant impacts are identified by an asterisk (*) in Row 12.

(d) Here a direct comparison between indices is made, in a manner paralleling the comparison of simple ranks which generated Table 3. Again, the attempt is to alter the performance rank by employing the alternate approach. Variations are recorded by an asterisk (*) in Row 14.

(e) Here the conventional performance measure of sales per square foot is recorded for comparison. The measure was available for only four firms and whether or not these firms were area sales leaders is not divulged. What is important is that, while there is a certain similarity of rankings in each of the four methods presented here, it is not clear that sales per square foot is necessarily a superior or even satisfactory measure, either in terms of its simplicity, or its accuracy. Moreover, while sales per square foot are not readily shared by competitors, our performance criteria provides a device by which competitors may readily assess their relative competitive merits or shortcomings.

Source: Tables 1-3.

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