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Which Billing Do Customers Prefer?— The Results of an Attitude Survey

by KENNARD W. WEBSTER
Partner, New York Office

*Presented before the Controllers Congress of the National
Retail Merchants Association, Minneapolis—May 1966*

THIS PAPER reports on an attitude survey recently undertaken by the firm of Haskins & Sells with the co-operation of several retail stores throughout the country. The survey asked the customer to express preferences between two billing methods commonly installed on electronic computer equipment, which are known colloquially in the trade as “country club” and “descriptive” billing. The monthly information furnished the customer differs, one method to another, and is illustrated in Exhibits B and C, pages 383 and 384, respectively.

The idea for the survey arose during the course of a computer feasibility study for a department store chain. It was obvious, from the standpoint of using electronic data processing equipment, that there were several advantages in using descriptive billing. Since descriptive billing was a departure from present practice, the question naturally arose, How would the customers react to descriptive billing?

We didn't know the answer to the question, so we decided the most straightforward approach was to ask the customer directly. Before going any further, however, we discussed the subject with Sam Flanel at NRMA headquarters, hoping that he was aware of some available information on customer preference. He was not, but he brought up the logical question of whether the opinions in one part of the country would necessarily be valid somewhere else. The more the subject was discussed, the more desirable it appeared to be to make a survey, but while we were doing it, to extend the project to several sections of the country to see if there were geographical differences. So this is what we did, and we are now reporting the results to you.

THE SURVEY MATERIAL

To start the project, we developed a set of survey material to be mailed to department or specialty store customers, requesting a mailed response. This survey set is illustrated in Exhibits A through D (pages 382 to 385 inclusive); and it consisted of:

- An example of country club billing
- An example of descriptive billing

- A letter explaining the survey
- A questionnaire to be completed and returned in a postage-free envelope

At the outset, it was decided that both illustrations should assume that billing was to be accomplished procedurally by using an electronic computer. This choice was made because we were not trying to test current methods but rather the two principal alternatives available if a change to computers were to be made.

We tested the validity of the survey set in a test-mailing before making a volume distribution. The test-mailing was made in the Charlotte, North Carolina, area and consisted of mailings to 200 out of a total population of around 40,000 active accounts. We should say at this point that the mailing lists were selected from only the active accounts of a store, eliminating any account with no balance or no activity in the last two months. We wanted to be sure that we were dealing with the active customers. We wanted to be sure as well that the names selected for mailing were representative. Therefore, the selection of names from the total population of active accounts was made by random-sampling techniques, as developed for similar problems in our audit practice.

Fortunately, the test-survey set required no changes. The questionnaires returned were all valid except one; the comments did not indicate confusion on the part of the customer; and we received a whopping 41% return within the first three weeks after mailing. This return led us slightly astray later, in that we sent out twice as many questionnaires as the number of replies we wanted, assuming a 50% return. What actually happened, however, was that the 41% return of the test sample in the first three weeks turned out to be only 43% in the next two months, so we were slightly short of our theoretical goal in terms of replies received. However, this had little effect on the reliability of the survey results, as we will discuss later when we talk about the statistical side of the mathematical model established for the survey.

To get back to the point at issue—the survey material that was mailed—the best way to understand it is to see it.

Now, just for fun, we want you to be a customer for a few minutes and fill out the same questionnaire (page 385) the customer did. This will serve the purpose of familiarizing you with the data so that the rest of the discussion will be more understandable.

Survey Letter of Transmittal

Below is the letter of transmittal explaining the survey, which was mailed to each selected customer along with the survey material shown in Exhibits B through D.

NATIONAL RETAIL MERCHANTS ASSOCIATION
SURVEY OF CUSTOMER PREFERENCE NO. B6C
P. O. Box 2298
Philadelphia, Pennsylvania 19103

Dear Customer:

You have been selected to express your opinion on two methods commonly used by retail stores for billing charge customers.

The more people who respond the more reliable the results of the survey will be. We would certainly appreciate it if you would complete the enclosed questionnaire and mail it soon in the postage-free envelope.

WHAT IS THE SURVEY ALL ABOUT?

It is being conducted in several representative sections of the country and has no direct relationship to local stores where you may have charge accounts.

Two envelopes, containing the samples, are enclosed:
(They are marked "Set 1" and "Set 2.")

Set 1 contains four cards, three of which are sales slips representing actual purchases (the light brown cards) and one which is a combination monthly statement and remittance advice (the yellow one).

Set 2 contains a white monthly statement form which summarizes the account activity for the month.
No sales slips are enclosed.

Do you like one approach better than the other? If you do, check the applicable block on the questionnaire.

It may be that you don't really care which type statements you receive, in which case check the block marked "either."

We want to thank you for your cooperation. We hope you'll respond, and soon. The results will be reported at a meeting of the National Retail Merchants Association in May of this year.

Exhibit B

Sample Set 1—Country Club Billing

Actual punched cards were enclosed in a special envelope labeled "Set 1." Photocopies of the punched cards are shown below:

DATE 12/23/65 SOLD BY 4738 STORE NO. 1 AMT. OF SALE 17.24	123 456 789 7 MRS. A. CUSTOMER EASY STREET ANY TOWN, U.S.A. CUSTOMER NAME AND ADDRESS ANY STORE	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>QTY.</th> <th>MERCHANDISE</th> <th>PRICE</th> <th>AMOUNT</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SWIMSUIT</td> <td>16.90</td> <td>16.90</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>16.90</td> </tr> </tbody> </table>	QTY.	MERCHANDISE	PRICE	AMOUNT	1	SWIMSUIT	16.90	16.90								16.90
QTY.	MERCHANDISE	PRICE	AMOUNT															
1	SWIMSUIT	16.90	16.90															
			16.90															
DATE 1/11/66 SOLD BY 2627 STORE NO. 1 AMT. OF SALE 15.25	123 456 789 7 MRS. A. CUSTOMER EASY STREET ANY TOWN, U.S.A. CUSTOMER NAME AND ADDRESS ANY STORE	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>QTY.</th> <th>MERCHANDISE</th> <th>PRICE</th> <th>AMOUNT</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>ELEC. PERC.</td> <td></td> <td>14.95</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>14.95</td> </tr> </tbody> </table>	QTY.	MERCHANDISE	PRICE	AMOUNT	1	ELEC. PERC.		14.95								14.95
QTY.	MERCHANDISE	PRICE	AMOUNT															
1	ELEC. PERC.		14.95															
			14.95															
DATE 1/18/66 SOLD BY 7621 STORE NO. 1 AMT. OF SALE 10.15	123 456 789 7 MRS. A. CUSTOMER EASY STREET ANY TOWN, U.S.A. CUSTOMER NAME AND ADDRESS ANY STORE U. S. A. Mrs. A. Customer CUSTOMER'S SIGNATURE	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>QTY.</th> <th>MERCHANDISE</th> <th>PRICE</th> <th>AMOUNT</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Hat</td> <td></td> <td>9.95</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>9.95</td> </tr> </tbody> </table> <p>TOTAL 9.95 SALES TAX 20 AMT. OF SALE 10.15</p>	QTY.	MERCHANDISE	PRICE	AMOUNT	1	Hat		9.95								9.95
QTY.	MERCHANDISE	PRICE	AMOUNT															
1	Hat		9.95															
			9.95															

ANY STORE U. S. A.			MRS. A. CUSTOMER EASY STREET ANY TOWN, U.S.A.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">ACCOUNT NUMBER</td> </tr> <tr> <td>123</td> <td>456 789 7</td> </tr> <tr> <td colspan="2">BILLING DATE</td> </tr> <tr> <td colspan="2">JAN. 21, 1966</td> </tr> <tr> <td colspan="2">AMOUNT DUE</td> </tr> <tr> <td colspan="2">42.64</td> </tr> </table>	ACCOUNT NUMBER		123	456 789 7	BILLING DATE		JAN. 21, 1966		AMOUNT DUE		42.64	
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PREVIOUS BALANCE	PAYMENTS, CREDITS AND RETURNS	PURCHASES AND CHARGES	SERVICE CHARGE	BALANCE												
16.84	16.84	42.64		42.64												

Exhibit C

Sample Set 2—Descriptive Billing

A statement, illustrated below, was enclosed in a special envelope marked "Set 2." Both sides of the statement are shown, illustrating the use of description details for "starred" departments.

101-ACCESSORIES
JEWEL BOXES
PURSE ACCESSORIES
HANDKERCHIEFS
WEARWEAR
BELTS
UMBRELLAS
PLASTIC SHOWER
BEACH ACCESSORIES
BATH ACCESSORIES
NOVELTIES

102-SPORTSWEAR
SWEETS & PILLOWCASES
BLANKETS
SPREADS
RUGS
TOWELS
TABLECLOTHS
SHOWER CURTAINS

103-WOMEN'S SPORTSWEAR
DRESSERS
SHIRTS
SHORTS
SLACKS
BLOUSES
JACKETS
COORDINATES
DRESS & SKI WEAR
SWEATERS & SUITS

104-DRESSES, ROBES
DRESSES
HOLERS/DRESSES
LAPTOPS
ROBES
DRESSING GOWN
APRON
UNIVERSITY DRESSES
AND SPORTSWEAR

105-MEN'S SPORTSWEAR
MEN'S SPORT CO
SLACKS
JACKETS
BANKOATS

106-MEN'S PURSHE
MEN'S SHIRT
SOCKS
HUNGERS
BELTS
SWEATERS
HATS
DRESSERS
DRESSING GOWN
GIFT ITEMS
SHIRTS

107-CURTAINS, DRAPES (cont.)
TODD PILLOWS
WINDOW SHADES

108-SMALL HOUSEWARES
PLASTIC CONSERVAGE
POTS & PANS
PLATE TRAYS
CUTLERY
CANDLES
LAUNDRY & CLEANING SUPPLIES
KITCHEN AIDS
SHELF PAPER
PAPER GOODS
SMALL WOODSWARE
BUNGAROUND GOODS
BATH ACCESSORIES
HALLROOM SUPPLIES

109-HOTTONS, CLOSET SHOP (cont.)
HAT BOXES
JEWELRY & SEWING BOXES
PLATES, CROCKS & BOWLS
SEWING ACCESSORIES
HANDCROCH IMPERIALS
SHOE SHINE SUPPLIES
BATH GOODS
SUN GLASSES
HARD GOODS
LIGHT BULBS
SANITARY GOODS
SHOWER CUPS
BEACH BAGS & ROBES

110-COSMETICS
COSMETICS
SUNGLASSES
DRESSER SETS
FITTED TRAVEL KITS

111-DRUGS
ORAL ITEMS
TOOTH BRUSHES

112-TABLE LINEN, TOWELS
TABLECLOTHS
TOWELS
BATH TOWELS
SHOWER CURTAINS
PLACED MATS
SCARVES & DOLIES

113-WOMEN WOMEN'S SHOP
DRESSERS
SHIRTS
PAINTS & TOPS
SHORTS & BLOUSES
SHORTS
JANPERS
SUITS
JACKETS
COORDINATES
SEAR COATS
DRESS & SKI WEAR
DRESSES
SUITS

114-SLIPPERS PLAYBOYS
SLIPPERS
PLAYSHOES

115-UNIVERSITY SHOP (cont.)
SWEETS
SOCKS
TIES
BELTS
DRESSERS
GIFT ITEMS

116-MEN'S ACCESSORIES
MEN'S TIE
JEWELRY
BELTS
BELLFOLDS
UMBRELLAS
LAPPELERS
CLOVES
GARTERS
SUSPENDERS
GIFT ITEMS

117-MEN'S UNIFORM, ROBES
MEN'S DRESSERS
SKI WEAR
ROBES
GIFT ITEMS

118-SPORTING GOODS
SPORTS EQUIPMENT
ATHLETIC SHIRT SHIRTS & CLOTHING
ADULT GAMES
CLIMBING EQUIPMENT
BICYCLES
BICYCLE TABLE TENTS & CARD TABLES
CAMP, TABLE EQUIPMENT

BACK

**ANY STORE
U. S. A.**

MRS. A. CUSTOMER
EASY STREET
ANY TOWN, U.S.A.

BILLING DATE
JAN. 21, 1966

ACCOUNT NUMBER
123-456-789-7

AMOUNT DUE
42.64

AMOUNT ENCLOSED

AMOUNT DUE

AMOUNT ENCLOSED

PLEASE DETACH AND RETURN WITH REMITTANCE				MERCHANDISE DESCRIPTION		CHARGES	CREDITS
DATE	REFERENCE	DEPT.					
12/23	14738					17.24	
12/30	20000					15.28	
1/11	12627					10.15	
1/18	17621						16.84
		109		* WOMENS SPORTSWEAR			
		211		PAYMENT - THANK YOU			
				SMALL APPLIANCES			
				MILLINERY			

* PLEASE SEE OTHER SIDE FOR DESCRIPTION DETAILS.

BILLING DATE	PREVIOUS BALANCE	PAYMENTS AND CREDITS	PURCHASES AND CHARGES	SERVICE CHARGE	BALANCE	AMOUNT DUE
JAN. 21, 1966	16.84	16.84	42.64		42.64	42.64

FRONT

Exhibit D

The Questionnaire and the return envelope that completed the survey packages are shown below:

QUESTIONNAIRE

PLEASE CHECK ONE OF THE THREE BLOCKS BELOW

I prefer to receive the card-type monthly statement, with the card-type sales slips attached (the yellow and light brown ones)

I prefer to receive the monthly statement showing a brief description of what was purchased, but without any sales slips (the white one)

It makes no significant difference to me which one of the two I receive

Set 1

Set 2

Either

If you checked "either," then do not answer the following questions:

Which of the following four statements most clearly expresses your degree of preference for Set 1 or Set 2?

- () A. It would be inconvenient to me if the other type were used.
- () B. It would not be a problem to me, whichever type were used, but I have a clear preference for the type I checked.
- () C. It was difficult to make up my mind when I checked the preference.
- () D. None of the three statements in a, b, or c applies.

Do you have any remarks?

PA

National Retail Merchants Association,
Survey of Customer Preference No. B6C,
P. O. Box 2298,
Philadelphia, Pennsylvania 19103.

SURVEY AREAS, MAILINGS, AND RESPONSES

We selected the following locations and types of stores for mailings:

West	— Los Angeles	— A large specialty store using country club billing (large men's departments)
Midwest	— Chicago	— A department store using country club billing
East	— New York	— A large women's specialty store using descriptive billing
	— Philadelphia	— A department store carrying "prestige" merchandise lines using country club billing — A department store emphasizing the "discount" approach using country club billing
South	— Charlotte	— A department store using country club billing

As you can see from the list, there is a mix of department and specialty stores. All but one of the stores sampled uses country club billing now. This heavy leaning toward stores using country club billing was made with malice aforethought, however, for two reasons:

- (1) If a store changed its billing approach, it would most likely be a switch from country club to descriptive. Therefore, the opinion of customers receiving country club bills is important.
- (2) Some of the stores using descriptive billing adopted the system recently. Some of them ran into error problems in the changeover, which are still remembered by the customer. We did not want to confuse the survey results with problems arising from billing errors or misunderstandings.

You will also notice that two stores were sampled in Philadelphia, one using "discount" lines and the other "prestige" lines. We wanted to see if, in the same locality, the customers of a "discount house" had different preferences.

Table 1, on page 387, compares the number of mailings with the questionnaires returned. There were only 20 so-called invalid returns. Four of this group were irked at being included in such an undertaking

as this survey, and said so. Most of the remainder wanted both types of billing; that is to say, a more descriptive bill with sales checks attached.

A word now about the names and addresses used. Except for the test sample, and the added mailing of 400 questionnaires in Philadelphia for a "discount house" operation, each mailing was approximately 800 questionnaires. This number of mailings was selected for these reasons:

- (1) 800 mailings at an assumed rate of response of 50% would yield 400 questionnaires.
- (2) 400 responses to a simple question should yield, statistically, a 95% reliability that a 50-50 response would be within a range of (plus or minus) 5% accuracy. As you move from an assumed 50-50 response to a 60-40 or 70-30 response, the degree of accuracy increases. For the sake of accuracy of results, we started with the assumption requiring the greatest number of responses; that is to say, half the people would prefer descriptive and half would prefer country club.

Table 1

Questionnaires Issued, by City of Store Location and Returns Received

City of Store Location	Total Issued	Returned			Per Cent Returned
		Valid	Invalid	Total	
Charlotte, N.C.	199	84	1	85	43%
New York, N.Y.	786	329	6	335	43%
Philadelphia, Pa.					
(Prestige Lines)	786	295	5	300	38%
(Discount Lines)	394	138	2	140	36%
Los Angeles, Calif.	792	252	5	257	32%
Chicago, Ill.	792	312	1	313	40%
Total	3,749	1,410	20	1,430	38%

The actual selection of names and addresses from the total charge customers in a store was, as discussed above, selected from only the active customers, on a random-sampling basis. The random sample was individually designed to fit the procedures being employed in maintaining accounts receivable in each store, taking into consideration the total number of charge accounts related to the size of the sample. Actual

names and addresses were secured direct from store data by members of our audit staff. The audit staff regularly uses statistical sampling in their audit work and are familiar with the random-sampling techniques employed.

MAJOR PREFERENCE RESULTS

The results of the survey, in terms of the simple question, *Which billing method do you prefer, or do you have no preference?* are tabulated in Table 2 on page 389.

From the standpoint of replies from all sources, 60% favor country club billing, 32% descriptive, and 8% have no preference. This result, of course, applies only to those who answered, or 38% of those polled.

An interesting question is, What about the opinion of those who did not respond to the questionnaire? Perhaps the best assumption in this case, based on reason, is of a negative-assurance nature: that those having a strong preference probably replied in a higher percentage than those who had no strong preference. Therefore, it would appear that the survey results are weighted toward those situations where a customer prefers either descriptive or country club billing. To say it another way, it seems likely that those customers having a weak preference, or none at all, would be those most likely not to answer the questionnaire at all.

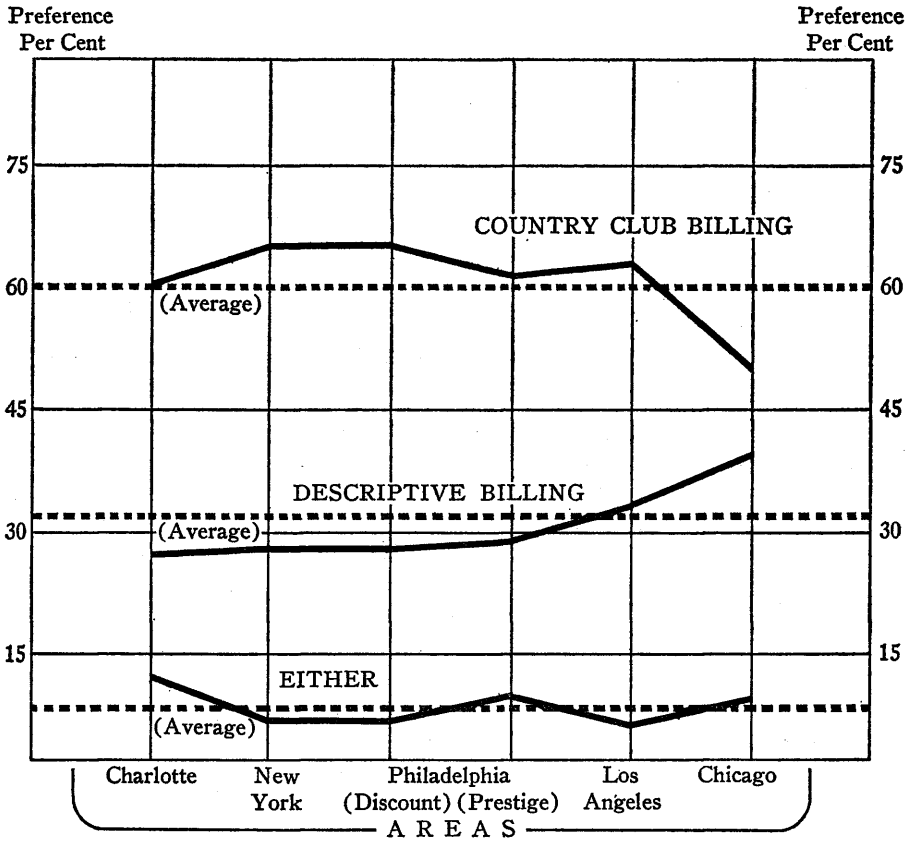
From the standpoint of comparing the reliability of the sample as a whole to the results of the sample in any particular area, it is fair to say that the reliability of the whole is slightly greater than the parts, but only slightly so. The results in the various areas are so similar, except possibly for a lesser preference for country club billing in Chicago, that it is unlikely that a peculiar situation in a given area has distorted the results for that area to any significant extent. It would also be most unlikely that a combination of different situations in so wide a sample had developed a compensating situation that balanced out the comparisons. Table 3, on page 390, compares graphically the opinion results by area to the average results country-wide.

We should say at this point that there was an unusually large percentage response to the questionnaire, which has a strong bearing on the reliability of the results, as later remarks relating to the statistics will illustrate.

Table 2
Replies to Questionnaire by Billing-Type Preference
(Invalid questionnaires were too few to consider)

City of Store Location	Total Returned	PREFERENCE (Number of Replies)			PREFERENCE (Per Cent of Replies)		
		(Set #1)	(Set #2)	Either	Country Club	Descriptive	Either
Charlotte, N.C.	84	50	23	11	60%	27%	13%
New York, N.Y.	329	215	90	24	65	28	7
Philadelphia, Pa.							
(Prestige Lines)	295	179	86	30	61	29	10
(Discount Lines)	138	89	39	10	65	28	7
Los Angeles, Calif.	252	156	84	12	62	33	5
Chicago, Ill.	312	158	125	29	51	40	9
Total	1,410	847	447	116	60%	32%	8%

Table 3
Chart Comparing Billing-Type Preference by
Geographic Area to the Average for All Areas Combined



As to the differences in attitudes between customers of a prestige-line store compared to a discount-type operation, the minor variations in percentage results between these two mailings (see Philadelphia statistics) indicate generally the following: The variations do not indicate a basis for definitely stating that the customers have differing views based on price lines of merchandise carried.

As to the differences in attitudes between customers who now receive descriptive-type billings (see New York statistics) and those who may not, the same statement generally applies: The variation does not indicate a basis for definitely stating that the customers have differing views based on whether they now receive descriptive or country club billings.

HOW STRONG WAS THE PREFERENCE?

We wanted to know what a customer's preference was. We also wanted to know how strong the preference was, since it is important to evaluate how irritated a customer would be if an approach different from his preference were used. The results of the questions listed on the questionnaire as items (a) through (d), which were designed to determine the strength of a preference, are illustrated in Table 4 as shown on page 393.

As you might have expected, the retailer is in the middle again. Regardless of the method used, someone is going to be irritated.

Let's examine for a minute the results shown in Table 4, and see whence the irritation arises. This table, first of all, restates questions (a) through (d). Also listed are the number of customers who responded to each of these questions, grouped by those who preferred country club billing and those who preferred descriptive. (We should emphasize that the percentages shown relate to the total number of replies received—1,410, rather than the total replies for each category.) The reason this percentage base was selected is that in any given situation you are concerned with all the customers, not just those who prefer one method or another.

It is surprising to see how many customers who expressed a degree of preference also said they were not seriously concerned with the billing method used. This figure totals 57% of all replies, arrived at as follows:

Those choosing country club:

Checking question (b)	33%	
Checking question (c)	2%	35%

Those choosing descriptive:

Checking question (b)	20%	
Checking question (c)	2%	22%
Total		57%

This leaves the hard core of resistance to be those customers checking question (a), which in the case of—

Country club was	14%
Descriptive was	3%

or a total of 17% of all customers replying.

It should be further stated that both the figures mentioned immediately above probably approach a maximum percentage of customers so inclined, taking into consideration the likelihood that more of those with the strongest feelings responded than did those who were less concerned.

The data presented more or less speak for themselves. Many customers, however, made comments on the questionnaire. These comments were too numerous, too varied, and in many cases too inconsequential, to present statistically. But there was a pattern of comments relating to the reasons for favoring one method or the other. Briefly but incompletely stated, the comments indicated:

- (1) Reasons for favoring country club billing:
 - a. Easier to verify charges and credits for accuracy, customer signature and item charged (particularly desirable when the account is active and more than one family member uses the account).
 - b. Handy as a record of sales taxes paid.
- (2) Reason for favoring descriptive billing:
 - a. A preference for itemization of all charges and credits on a single statement. (Simpler for file, easier to check addition.)

STATISTICAL RELIABILITY OF THE SAMPLE RESULTS

The sample results are of course subject to sampling error. That is, they will differ somewhat from the percentage distribution that would be obtained if every single customer were contacted. A measure of the

Table 4
Replies to Questionnaire by Degree of Preferences

Degree of Preference	City of Store Location				Degree of Preference	
	Charlotte, N.C.	New York, N.Y.	Philadelphia, Pa.	Los Angeles, Calif.	Chicago, Ill.	(No. of Replies) Total
Country Club Billing:						
Answering question A *	9	67	39	16	34	195
Answering question B *	28	100	92	58	90	463
Answering question C *	1	8	5	-	8	25
Answering question D *	3	13	8	5	6	50
No preference checked	9	27	35	10	18	114
Total Country Club	50	215	179	89	156	847
Descriptive Billing:						
Answering question A *	-	13	5	4	5	45
Answering question B *	14	51	60	23	53	282
Answering question C *	-	7	4	3	8	25
Answering question D *	2	2	3	1	3	15
No preference checked	7	17	14	8	15	80
Total Descriptive	23	90	86	39	84	447
Either	11	24	30	10	12	116
TOTAL REPLIES	84	329	295	138	252	1,410
						100%

* Explanation of Degree of Preference:

- A. It would be inconvenient to me if the other type were used.
- B. It would not be a problem to me, whichever type were used, but I have a clear preference for the type I checked.
- C. It was difficult to make up my mind when I checked the preference.
- D. None of the statements in A, B, or C applies.

amount of sampling error present in a random sample is the standard error. (See formula in Note 1 below.) This sampling error is usually expressed in terms of a confidence interval. The confidence interval selected for illustrating the reliability indexes in this survey is 95%, which is the equivalent of about two standard errors—to be more precise, 1.96.

One of the more significant matters pointed up in the survey has to do with the customers who, first of all, expressed a preference and also checked question (a) on the questionnaire, indicating a strong preference for their choice. If we look, therefore, at the 14% of respondents who strongly favored country club billing, we find that the 95% confidence interval for this proportion among all customers is:

$$14\% \pm 1.8\%$$

Similarly, if we look at the 60% of customers who favored country club billing, including the proportion who did not indicate a strong preference, we find that the .95 confidence interval for the results obtained from our sample size can be stated as:

$$60\% \pm 2.6\%$$

That is, we are 95% confident that our sample result is within $\pm 2.6\%$ of the result that would be obtained if every single customer were asked. Approximately the same reliability pertains to descriptive billing results as to country club results.

For the individual stores, differences in the proportion favoring one type billing over the other are not statistically significant.

FURTHER CONSIDERATIONS

There are matters of further significance in terms of the use of the results of this survey by a particular store. Answers relating to two additional points could be useful:

- (1) The pattern of results of a follow-up of the non-responses (a simple statistical problem, but one which we had no time to pursue prior to this convention)

Note 1—Formula (for large populations):

$$S_p = \sqrt{\frac{p \cdot q}{n}}, \text{ where } S_p \text{ is the standard error, } p \text{ is the sample percentage, } q =$$

(1 - p), and n is sample size.

- (2) Further investigation as to the pattern of response, as stratified by the annual-sales-volume categories for the customers queried

It is possible, for example, that customers making the most purchases have stronger preferences, one way or another, than those who buy less merchandise. If so, this is important. While it was not practical to incorporate this complication in the first survey on a national scale, it would be comparatively simple and inexpensive to develop these data for the customers of a particular store.

