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# Direct Observation of Purchasing Behavior

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and

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► Much market research relies on consumers' retrospective reports of purchasing behavior. This article shows that it is possible to supplement and enrich questionnaire results by making direct observations of purchasing. It describes the observation technique, discusses advantages and limitations, and presents some specimen results.

The time is 7:30 on a Thursday evening. The location is the Good Deal supermarket in Totowa, New Jersey. The following episode takes place:

A school age boy and his parents enter the aisle. The parents hurry down the aisle, looking straight ahead and not even glancing at the cereals. "Can't I have some cereal?" asks the boy very winningly. "No," answers the father very sternly, and quickly continues up the aisle. "You dirty crumb," is the boy's reply as he walks up the aisle with his head lowered.

This episode is one of 1,500 observations of shopping behavior made in supermarkets in Northern New Jersey. The observations were collected to find out what information this method might yield and what problems might arise if it were to be used routinely on a larger scale.

The idea of making detailed on-the-spot observations of purchasing behavior was suggested by the work of Iowa psychologist Roger Barker [1]. In studying the behavior of children, Barker and his colleagues trailed their subjects with pad and pencil in hand, making detailed records of how the children dealt with the environment. Their findings suggested that direct observations of consumer purchasing behavior might provide information which cannot be obtained from experiments or questionnaires.

This article begins with some observations about the art of making observations. It continues with a discus-

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sion of the advantages and disadvantages of using direct observations in marketing research and concludes with a presentation of some specimen results.

## MAKING OBSERVATIONS

In the pilot study reported here, the process of collecting observations proved tedious but not especially difficult. The supermarket managers agreed to cooperate as soon as they were sure that the observers were not going to interfere with normal business, were not trying to discover something that would discredit the store, and were not shoplifting! The shoppers seldom noticed the observers. When they did, they usually regarded the observers as part of the scenery.

The observers stood by the counters with pad and pencil recording "episodes". An episode began when a shopper appeared in the aisle with the apparent intention of buying something, and it ended when the shopper left the aisle. If the shopper appeared to be interested only in the counter across the aisle, or seemed to be just passing through, no record was made. Collecting 1,500 episodes required about 600 hours, including travel and write-up time.

The only real data collection problem was persuading the observers to include sufficient detail in their records. In practice trials the observers were inclined to record only the bare bones of each transaction, omitting the detail which is the essence of the method. This problem was solved after repeated use of explicit examples.

A second, comparatively minor data collection problem, was persuading the observers to prepare permanent records immediately after a day's observations were made. It became important to transfer the observations from notes to permanent record cards before the notes got cold. Again, the problem was solved by repeated instruction and use of examples.

## ADVANTAGES OF THE METHOD

### *What People Do, Not What They Say*

The principal advantage of direct observation is that when it is done well it produces a highly detailed, nearly

complete record of what people actually do. It does not depend on the respondent's ability to interpret a questionnaire question correctly, or on the respondent's memory of a not very important and perhaps not very recent event. It is not influenced by any tendency to rationalize behavior to make it appear in the best light.

### *Serendipity*

A secondary but sometimes important advantage of this method is that it occasionally produces an idea that can be tested later. In this investigation, for example, the candy counter watcher noticed that shoppers seemed to be rejecting candy packaged in grayish, semi-transparent material in favor of candy packaged in clear, transparent plastic. The evidence from the observations was not conclusive, but the hypothesis would be easy to test by experiment. If confirmed, the finding would be important.

Despite these apparent advantages, few studies involving direct observation of consumer behavior have been reported. Lorie and Roberts [5] mentioned a study which employed direct observations, but they gave only the briefest account of the results. Hicks and Kohl [4] used a motion picture camera to photograph purchasing activities but did not report results in much detail. More recently, large scale, well-reported observations of shopping behavior were combined with survey methods in a series of studies for Colonial Supermarkets [2]. Generally, however, purchasing behavior has been studied by means of retrospective reports, as in the recent study sponsored by *Life* [3].

## *DISADVANTAGES OF THE METHOD*

### *What, But Not Why*

One disadvantage of direct observation is that it provides information on behavior only, and behavior cannot always be interpreted easily. Take this episode for example:

A man with his arms full of cans throws the armful into a cart at the beginning of the aisle. He pulls the cart by the front along with him down the aisle. He turns around a Rinso Blue box and reads the front for a moment. Then he walks back to the beginning of the aisle and looks at Oxydol, regular size. He hesitates and picks up a large package of All with the rose bush offer. He leaves this box and walks up the rest of the aisle. He then reads an All box (in a display with the rest of the All's) and puts it back. He backs down the aisle halfway and reads the Dreft box then further up he reads the Ivory Snow box. He then takes a box of Instant Fels and puts it in the cart.

What was the man looking for? In this particular instance it was possible to ask him what he was doing. He explained:

"I am allergic and was looking for one with 'soap'

marked on it. I have a terrible reaction to detergents." He pointed to Salvo and said, "That kills me." He went on to discuss septic tanks, saying that people with septic tanks are told not to use detergents, that it is against the law in some places, etc. and related an army experience. The observer commented that the shopper had a hard time choosing, and asked, "Haven't you found one that you like?" The shopper said, "Every once in a while I get allergic to the one I am using so I have to switch." The observer asked, "Do you think this Instant Fels will do it?" He answered, "I haven't tried it. I hope so."

But it is not always possible to get an explanation because stopping one shopper may interfere with observing the next. Unanswered questions remain to tantalize the analyst, and sometimes must be resolved by a best guess.

### *Sampling Problem*

A second disadvantage of the direct observation method is that the results can be biased by when and where the observations are made. Shopping behavior varies with the kind of store because different shopping environments give the shopper different problems. It is one thing to shop in a small, crowded, urban market which offers limited selection, and something else again to fill a cart in a large highway store or spacious modern market in suburbia. Since all three kinds of markets sell large amounts of groceries, it is essential that all three be included in *their proper proportions* if the observations are to provide a true picture of shopping behavior.

In addition to differences in shopping environment among stores, shopping environment varies within the same store at different hours of the day and on different days. Stores are much more crowded at some times and on some days than others, and the probability that a shopper will be buying a lot of items at once is much higher on weekends and in the evenings [2].

Still another reason shopping behavior is different in different time periods is that the shopper population shifts from time to time. Employed men and women are seldom in stores during the business day. School children are usually not in the stores during school hours, but they appear in droves after school and on weekends.

These population shifts are not trivial. One can see their importance by trying to answer a simple question like, "What proportion of shoppers use a shopping list when buying cereal?" In the present observation shopping lists were used by 34 percent of the males, 20 percent of the females, and 12 percent of the couples. Since the relative proportions of males, females and couples change from time to time, the answer to the question will depend on when the observations are made.

The direct observation method creates two other problems. Both are important, but because they are shared with other research methods they will be only briefly noted.

### No Experimental Control

One problem is that since the observer has no control over important variables, cause and effect are sometimes indistinguishable. If a difference is observed between behavior in urban stores and behavior in suburban stores, for instance, it is hard to tell whether the difference is caused by the different shopping environments, by the fact that urban shoppers tend to be of lower economic class and of different ethnic groups, or by some combination of these and other factors. Sometimes it is possible to partial out confounding variables by multivariate analysis, but the basic problem always remains.

### Qualitative Data

The other problem this method shares with some other research methods is that the reports are narrative rather than quantitative. This means that analysis of the data will be time-consuming and that the results will be subject to the questions and reservations always associated with results based on interpretation and judgment.

Sometimes, of course, the interpretation problem is minor. To answer the question sequence:

What proportion of cereal shoppers had children with them?

In what proportion of the episodes did children attempt to influence cereal purchases?

And in what proportion of the episodes did they succeed?

It is merely necessary to count accurately if the observations were made correctly in the first place. But, to answer the question, "What proportion of the shoppers knew what they wanted when they approached the cereal counter?" it is necessary to infer a state of mind. When the shopper marches right up to a specific spot in the display, grabs a box and goes, the evidence in favor of a preformed choice is all but conclusive. But when a shopper hesitates, searches, picks things up and puts things down, it is hard to guess whether the shopper doesn't know what he wants, or knows what he wants but can't find it. In cases such as this a judgment must be made.

These disadvantages are important, but they are not necessarily negative. All research methods have their limitations, and some of the most popular and widely accepted methods have limitations which the direct observation method eliminates. The question is, can the limitations of the method be accepted considering the information it yields.

## SOME RESULTS

### Composition of the Shopper Population

Because most marketing research consists of interviews with housewives, one can easily get the impression that most supermarket shopping is done by house-

**Table 1**  
COMPOSITION OF THE SHOPPER POPULATION

Shopper	Cereal	Candy	Detergent	Total
Housewife alone	36%	44%	46%	39%
With child or children	16	11	7	13
With husband	16	9	12	14
With other adult	6	5	4	5
Adult male alone, with other adult male, or with children	22	23	27	24
Child or children alone	4	8	4	5
Base (Number of episodes)	1000	250	250	1500

wives acting on their own. Table 1 shows that this is not the case. A housewife alone was the shopper in 39 percent of the episodes, but in 32 percent of the episodes the housewife was accompanied by someone else who often participated in shopping decisions, and in 29 percent of the cases the housewife was not present.

The finding that housewives are not the only shoppers is supported by other studies, when the other studies include other groups. For instance, the *Life* study of family shopping behavior [3] indicated that men had done the shopping exclusively in one out of six recent shopping trips and had participated in a large proportion of the other trips. The Colonial Supermarket study [2] produced percentages of nonhousewife shoppers similar to the percentages reported above. It seems clear that marketers who pay exclusive attention to housewives are making a mistake.

### Influence of Children

Table 2 shows the influence of children when present. As might be expected, this influence was strongest at the cereal counter, but at the candy counter it was distinct, and it was even present to some degree at the detergent display.

Table 2 also confirms an impression, reported by the observers early in the study, that suburban parents are more indulgent than urban parents, except when it comes to the purchase of candy. Suburban children made more influence attempts, and, except at the candy counter, they succeeded in a higher proportion of attempts.

### Influence of Adult Males

As indicated earlier, adult males do a significant amount of grocery shopping by themselves or with children, and at other times they accompany wives. They are important because when they make a serious

**Table 2**  
**INFLUENCE OF URBAN AND SUBURBAN CHILDREN  
 ON ADULTS' SHOPPING BEHAVIOR**

Item	Cereal	Candy	Detergent
<i>All children</i>			
Influence attempted	59%	55%	24%
Influence successful	36	29	20
<i>Base</i> (Episodes with children present)	338	84	46
<i>Urban</i>			
Influence attempted	57%	58%	13%
Influence successful	31	33	6
<i>Base</i> (Episodes with children present)	260	40	16
<i>Suburban</i>			
Influence attempted	68%	52%	30%
Influence successful	50	25	27
<i>Base</i> (Episodes with children present)	78	44	30

attempt to influence a purchase, they almost always succeed. Almost, but not always:

A young couple in their twenties enters the aisle. First they look at the tuna fish across the aisle. After choosing some, they turn to the cereal.

"Get a special flavor," says the wife. Her husband then looks and grabs a package of Variety.

"No, no," says the wife quickly. "You don't like them."

"Yes I do," protests the husband. "I like Corn Flakes and stuff," he says as he reads the cereals in the package.

"No you don't," replies the wife. The husband continues to look. "How about these?" he says as he grabs a Shop-Rite Variety Pak.

"That's the same thing," answers the wife.

"How about Corn Flakes?" he then suggests.

"No, get something different."

Her husband looks again. "How about Rice Krispies?"

"No," answers the wife. She looks and says, "Get Special K." He then looks and reaches for a box of Special K Handi-Pak. He puts it in the cart and they then turn to look at the soup across the aisle.

Milquetoast episodes such as this are rare. In the present observations adult males were the sole purchasers or were present and exercised decisive influence in 20 percent of the cereal purchases, 14 percent of the candy purchases and 24 percent of the detergent purchases.

#### *The Role of Attitudes*

One of the perennial questions in attitude research is, "Do attitudes predict behavior?" The traditional approach to this question has been to measure attitudes, usually by some paper-and-pencil test, and then to measure behavior at some later date, usually by means of a retrospective interview. The relations found by this

approach have never been perfect. Sometimes they have been so low that the investigators have concluded that attitudes influence behavior little if at all.

Direct observation provides a different point of view. Since it records behavior, the task is to infer the degree to which some preformed attitude or intention played a guiding role. Sometimes the evidence is clear:

Two women in their forties enter the aisle. They have no cart. They stop and look at cereal. They seem to be looking for a certain kind. They stand back and look at all the cereal.

"I want a small box. I got it here before," says the first woman.

"What kind is it?" asks the second woman.

"Bran and Prune Flakes," answers the first. The woman then looks around and glances down the aisle.

"I see it," calls out the second woman.

"I see it," calls out the first woman who also looks down the aisle.

"I think I see it," adds the second woman. They both begin to walk down the aisle.

"Here it is," says the second woman as she points to it.

"Yes."

"How are we going to get it?" asks the second woman. (It is located on the top shelf and the first row is gone.) The second woman then grabs the bottom box and lifts three boxes together. The first woman then takes the top box and the other woman puts the others back.

"There," she says as she turns around. She has a big smile on her face. They both leave.

In other cases the evidence for clear intention is weaker, but nevertheless it is there. For example:

A woman walks slowly up the aisle while her husband follows pushing the cart. She pauses halfway past the display and looks at the detergent. Meanwhile her husband passes her and picks up a giant size All, reaching forward. He places it directly in his cart. He steps back a few steps, reaches up and slides out the top boxes of Ivory Snow, and places them in his cart.

The wife asks, "Did you get All?" while looking at her list.

He says, "Yes."

Then they walk on.

Evidence on the influence of attitudes is summarized in Table 3.

Of the people who approached the cereal counter, 55 percent seemed to have had what they wanted either written down or in mind. An attitude or intention of some sort was obviously involved.

The figure 55 percent, representing clear intention to purchase a specific brand, is interesting for several reasons. First, even though it may not be absolutely correct because of sampling and interpretation problems, it shows why attitude measures often do not predict accurately. Slightly more than half of the people who showed up at the cereal counter knew exactly what they wanted and were able to find it. Others, about 30 percent, had a difficult time deciding or had difficulty finding what they wanted, and about 15 percent finally went

away without buying anything. It is not surprising that attitude measures taken some time in the past are not perfect predictors of what the shopper is going to do some time in the future.

The 55 percent "knew-what-they-wanted" figure for cereal is interesting also because it differs from the corresponding figures for candy and for detergent which are 38 percent and 72 percent, respectively. The low figure for candy probably resulted because a surprisingly large proportion (44 percent) of those who approached the candy counter went away without buying anything. Just why this should be true is not clear, but the no sale proportion for candy was higher than the corresponding proportions for cereal and detergents in both urban and suburban stores, and in urban stores the difference was particularly great. This finding is supported by the Colonial study observations. There, the proportion of candy no sales was twice that of cereal and detergents [5, p. C90]. Perhaps the candy counter lures people who have no real intention of buying and who manage to resist temptation—this time.

This study revealed the following information about attitudes. Attitudes and behavior are only loosely related. Much shopping takes places without a fixed predisposition as a guide. Furthermore, the degree of relation appears to be different from product to product, and there is some evidence that it is different in different types of stores. This explains why measures of predisposition are rough indicators at best.

#### *In-Store Influence of Price*

Knowing that price-cutting can and does move large amounts of merchandise, one might assume that most grocery shoppers are highly price-conscious most of the time. Indeed, most grocery store advertisements speak of price and little else.

But how much attention do shoppers pay to prices as they shop? The observer cannot always tell, when a shopper picks up a package, whether he or she is looking at the price. But if the observer watches closely, he can usually be reasonably sure; if he is in doubt, he can often stop the shopper and ask.

In the present observations, 13 percent of the cereal shoppers showed concern for price, while as far as the observers could tell the remaining 87 percent did not look at the price at all. The corresponding figures for candy and detergent were 17 percent and 25 percent, respectively. Even though these figures may not be absolutely accurate, both because of uncertainties in interpreting the observations and because of the sampling problem, it is clear that a great many shoppers do not check the price of what they buy. These figures also suggest that concern with price differs from product category to product category. The figure for detergents is almost twice as high as the figure for cereal.

Only small differences are found when the price data are broken down according to composition of the shopper population (Table 4). Females shopping alone appear to be a bit more price conscious than females shop-

Table 3  
INFLUENCE OF ATTITUDES ON PURCHASES

Item	Cereal	Candy	Detergent
Clear evidence of intention to buy specific brand	55%	38%	72%
Purchase or brand undecided; Purchase made	30	18	12
No purchase	15	44	16
Base (Number of episodes)	1000	250	250

ping with others. As one might expect, children appear to be least price conscious of all.

Urban shoppers showed more concern with the prices of candy and detergents than did suburban shoppers (Table 4). This is also to be expected since the urban shoppers in this study were at generally lower income levels than the suburban shoppers. For cereal, very few urban or suburban shoppers (11 percent and 13 percent, respectively) paid any attention to the price.

The data on price, then, suggest four main conclusions. First, concern with price is far from universal. It was present in some degree for all three products, but many shoppers just grabbed the box and left. Second, concern with price differs from product to product; in this case it was high for detergents, low for cereals. Third, when price is important, it is more important in urban than in suburban stores. Finally, sex differences in price consciousness are surprisingly small—much smaller than differences attributable to type of product or type of store.

#### *Inspecting the Package*

An elderly woman walks down the cereal aisle.

When she sees the cereals, she immediately stops and picks up a large box of H.O. Quick Oats.

She looks the box over entirely (apparently looking at the price and weight content).

While still holding this box in her hand, she picks up a box of Mother Oats.

She then looks this box over entirely and compares the two boxes.

She looks at the H.O. Quick Oats and then at the Mother Oats (apparently comparing their prices).

After comparing the two, she puts the box of Mother Oats back on the shelf and puts the other box in the cart.

After making this decision she remains where she is and continues to look at the cereals.

She then notices the smaller box of H.O. Quick Oats, which is on the upper shelf.

She picks up this box and looks at it, again reading the panels.

She puts the box down and turns around to her carriage.

She then stops, turns around, picks up the box again, and places it in her cart.

She replaces the larger box on the shelf, in the wrong place, and continues down the aisle not looking at the rest of the cereals.

This illustrates behavior which was first noted by

**Table 4**  
**CONCERN WITH PRICE AMONG URBAN AND SUBURBAN SHOPPERS**

<i>Shopper</i>	<i>Cereal</i>		<i>Candy</i>		<i>Detergent</i>		<i>Total</i>
	<i>Urban</i>	<i>Suburban</i>	<i>Urban</i>	<i>Suburban</i>	<i>Urban</i>	<i>Suburban</i>	
Adult male	11%	17%	17%*	16%*	30%*	11%*	15%
Adult female	11	19	21	14	33	22	17
Couple (with or without children)	12	8	25*	14*	14*	26*	13
Children (without adults)	7*	11*	0*	14*	22*	0*	10
Total	11	13	24	14	30	20	16

\* Base less than 50.

Lorie and Roberts [5] and which appeared in the observations to an unexpectedly high degree. People spend a lot of time handling packages—picking them up, putting them down, fondling them, reading them, dropping them, picking them up and putting them back in the wrong place, etc. Sometimes they are looking at the weight and price, sometimes to see what premiums are being offered on the package back, and sometimes just reading the fine print.

Twenty-two percent—more than one in five—of the cereal shoppers and the detergent shoppers spent enough time inspecting the package to cause the observer to make note of the fact. The figure for candy was lower—16 percent. These figures suggest that it is worth paying close attention to what the package looks like, *how it feels*, and what it says since people look them over carefully.

Table 5 indicates that women shopping alone paid the most attention to packages, while the least was by couples. However the differences among the shopper groups, and between urban and suburban shoppers, were generally small.

#### SUMMARY AND CONCLUSIONS

When questions arise about consumer behavior at the point of purchase, the traditional practice has been to rely on retrospective reports from questionnaires. This pilot study shows that it is possible, and, in fact, easy to collect direct observations of purchasing behavior

instead. As a marketing research method, direct observation has some drawbacks:

It shows what, not why.

It requires adequate sampling of both points in space and points in time.

It does not permit control over important variables.

It produces qualitative, not quantitative data.

On the other hand, direct observation has the advantage of revealing what people actually do, as distinguished from what people say. It can yield the correct answer when faulty memory, desire to impress the interviewer, or simple inattention to details would cause an interview answer to be wrong.

What kinds of answers can direct observation yield? In addition to an occasional lucky insight—like the observation that the candy shoppers were rejecting gray plastic packages—direct observation can provide answers to questions like these:

Who actually buys the product, and who influences the choice?

To what extent are brand choices made before the shopper enters the store, and to what extent are they made at the point of purchase?

How many people check the price?

Do shoppers study the package before purchase?

Within the limitations described in the body of this report, the following conclusions may be made:

1. Women do more of the family shopping than men, but

**Table 5**  
**PACKAGE INSPECTION BY URBAN AND SUBURBAN SHOPPERS**

<i>Shopper</i>	<i>Cereal</i>		<i>Candy</i>		<i>Detergent</i>		<i>Total</i>
	<i>Urban</i>	<i>Suburban</i>	<i>Urban</i>	<i>Suburban</i>	<i>Urban</i>	<i>Suburban</i>	
Adult male	23%	20%	3%*	11%*	24%*	21%*	20%
Adult female	25	28	25	16	30	17	24
Couple (with or without children)	15	13	13*	7*	14*	16*	14
Children (without adults)	17*	25*	29*	0*	22*	0*	17
Total	22	23	19	13	27	18	21

\* Base less than 50.

- men do enough of it to warrant the marketer's attention.
2. Husbands accompanying wives almost always influence purchase decisions when they try.
  3. Children, especially suburban children, are also quite influential, although the amount of influence varies from product to product.
  4. Plenty of shopping behavior takes place without fixed intention to buy specific brands. Attitude measures can, therefore, never be more than rough indicators of purchases.
  5. Urban shoppers show somewhat greater concern with price than suburban shoppers, but many in both groups pay no attention at all to prices marked on packages.
  6. Price consciousness varies according to type of product.
  7. Price consciousness seems to be slightly more characteristic of women than of men.

8. Many shoppers of all types inspect packages carefully before they buy. The tactile dimension therefore deserves more attention than it usually receives in package research.

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