Effects of Container on Perception of Product Quality

Wayne O. Miller
EFFECTS OF CONTAINER ON
PERCEPTION OF PRODUCT QUALITY

by
Wayne O. Miller

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Wayne O. Miller
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INTRODUCTION

A great many factors influence a consumer's decision on the relative quality of a given product. Jacoby, Olson, and Haddock (1971) list the most relevant cues in forming an impression of a product's quality:

(a) price; (b) product composition characteristics such as taste, aroma, color, style, and size; (c) packaging; (d) brand, manufacturer (i.e., corporate), and store image; (e) advertising; (f) word of mouth reports; and (g) past purchase experience.

It should be emphasized that these are only the most important cues to perception of quality because very unlikely cues often have a contributing influence. For example, Tucker (1964) developed brand loyalty to identical loaves of bread that were distinguishable only by single letters. This loyalty was in some cases so strong that the S would not accept a monetary premium in exchange for receiving a non-preferred loaf.

By far, the most thoroughly explored cue is price and its relationship to perceived product quality. Scitovsky (1944-45) made one of the initial studies of this relationship, and was later followed by Leavitt (1954), and Tull, Boring, and Gonsior (1964). The latter two studies used essentially the same methodology; they used a paper-and-pencil test simulating product purchases where the only information given was price. All three of these studies
reported basically the same finding—consumers rely heav­
ily upon price as an indicator of quality when there is a
substantial degree of uncertainty in making the purchase
decision. The paper-and-pencil studies had one obvious
flaw—they lacked realism.

To rectify this flaw, McConnell (1968) dispensed the
product (beer) at the consumer's residence in an attempt
to simulate the consuming atmosphere as closely as pos­
sible. McConnell found a positive non-linear relation­ship between price and the perceived quality of the pro­
duct when price was the sole cue provided. This was of
course only an extension of the results reported by Scitovsky
(1944-45), Leavitt (1954), and Tull et al. (1964).

In two later studies (Stafford & Enis, 1969; Valenzi
& Andrews, 1971), the pricing information variable was
combined with another quality cue. Stafford and Enis (1969)
combined the pricing information with a store image cue
and found a significant interaction between the two vari­
ables, even though the store image cue alone had no signi­
ficant effect on perceived quality. Valenzi and Andrews
(1971) found somewhat conflicting results when they com­
bined price and composition differences cues. The study
found that the second independent variable of product com­
position differences accounted for three times as much
variability in the quality ratings as did the price cue
(even though the actual product differences were small
compared to price differences).

A subsequent study (Jacoby et al., 1971) has confirmed this "shrinkage effect" of the pricing information influence when combined with additional quality cues. In that study, pricing information had a significant effect on quality perception only when that cue occurred in isolation. When additional cues of brand name and product composition differences were combined with price, the pricing information was by far the least important determiner of perceived quality.

The variable of brand name and its relationship with perceived product quality is important for at least two reasons: first, it appears to have a much greater impact on perceived quality than does pricing information; second, like pricing cues, it often has nothing to do with actual physical product differences, and is therefore a marketing artifact.

One of the most illustrative examples of the influence of brand name and brand image was the study by Allison and Uhl (1964) on the perceived quality of different brands of beer. The Ss were first given six unlabeled bottles of beer, and were later given six labeled bottles, two of which were the S's favorite brand. The initial unlabeled six-pack produced no beer that was rated significantly higher overall than the rest. However, when the same brands were later presented with their labels, the S's own brand
was rated significantly higher than the other brands 60% of the time.

Several other studies have been done attempting to assess the total influence of the brand image variable relative to other independent variables. One of the most common types of studies has linked brand name and product differences to test their relative efficacy on perceived quality. One of the best studies was done by White (1966) where two brands of adding machines were evaluated under three conditions: blind evaluation, correct brand labeling, and reversed brand labeling. In the blind situation, the unknown brand was rated somewhat superior, in the correct labeling situation the known brand was rated somewhat superior, and in the reversed labeling situation the unknown brand was rated vastly superior. This indicated that brand name can greatly overshadow product differences when perceptions of quality are being made. This apparent superiority of psychological variables over physical variables was also upheld in the Allison and Uhl (1964-) study previously mentioned. This relationship is not supported throughout all of the literature, however, for one study (Raffensperger & Pilgrim, 1956) reported equal effectiveness for seven different types of physical and psychological variables. This contradictory study was a taste discrimination test on differing samples of orange juice, where some Ss received only physical cues (actual product
differences) and other Ss received only psychological cues (quality information).

From the previous list of the most important variables affecting the perceived quality of a product, one variable was consistently absent in the literature. That variable was packaging. In all of the literature on perceived quality, only one study (Jacoby et al., 1971) had mentioned the effect of packaging, and that was in the list of independent variables previously stated. An early study by Brown (1958) used the dependent variable of perceived freshness of bread when studying the tactual differential between cellophane and wax wrappers under blinded conditions. A significant increase in perceived freshness was reported for identical loaves of bread when packaged in cellophane as compared to wax paper. The similarity between the perceived freshness variable and the perceived quality variable used in subsequent research is obvious.

The present study sought to isolate this variable of packaging as had previously been done for the variables of price, product composition, brand name, and store image. The general variable of packaging was broken down into two categories—unlabeled and recapped returnable and nonreturnable beer containers. The returnable grouping was further subdivided on the basis of best and worst bottle condition. The independent variable was novel, but the dependent variable was identical to that used in the
previously cited literature.

The primary question asked in this study was "What is the effect of the returnable bottle on the perceived quality of a beer as compared to the effect of the nonreturnable bottle?" This is a very realistic question when the appearance differential between the returnable and the nonreturnable bottle is acknowledged. The nonreturnable bottle for each brand of beer is obviously distinctive, and the brand image that the brewer is attempting to communicate is often reflected in the shape and quality of the beer's nonreturnable bottle. A super premium brand of beer is marketed with the image of "exclusiveness," and the design of the nonreturnable bottle usually reflects that image (with some exceptions).

Contrast the effect of the distinctive nonreturnable bottle with the appearance of the returnable beer container. The returnable bottle is exactly the same for all of the major brewers (with one exception). All of the beers are bottled in the same plain, heavy, dark-brown container regardless of the image created for any particular brand. Therefore, it is hypothesized that there is a significant lowering of the perceived quality of a beer when it is bottled in a returnable container as compared to the perceived quality of the same beer when bottled in a nonreturnable container.

From the practical point of view, this problem must
be dealt with by all beer manufacturers across all levels of actual beer quality, but the problem is particularly important for the producers of the distinctive super premium beers. They must answer the question, "How will this nondescript and unappealing bottle affect the image of quality and distinction that I want for my beer?" The super premium beer producers have so far answered this question by remaining strictly with their distinctive non-returnable bottles. The same question will soon be raised again, not only by the super premium beer producers, but by all brewers. This time, the problem will be confronted out of necessity rather than due to marketing considerations. With the new wave of ecology consciousness, there is being spawned legislation that attempts to prohibit or penalize the use of all nonreturnable containers.

In addition to the returnable and nonreturnable hypothesis, there were two lesser hypotheses being tested. The first is that there is a bottle main effect among the nonreturnable bottles. This is to say that there is a continuum of perceived quality of the beer directly related to the degree of appeal of the nonreturnable bottle. The last hypothesis is that there exists a beer main effect directly related to the quality of the brand of beer being sampled, regardless of the appearance of the container.
METHOD

Subjects

The Ss were 90 male undergraduate students from Western Michigan University. They ranged in age from 18 to 20 years, and were picked from three dormitories that housed only students from that age bracket. The three stipulations made on the Ss were that only one roommate could be used as a S, each S must have a refrigerator in his room, and that each could be classified as a "beer drinker" (the definition of this was arbitrarily set at consuming beer on at least one occasion per week.) This age group of legal beer drinkers was chosen to minimize the chances of occurrence of a brand image effect resulting from recognition of the distinctive nonreturnable bottles. It was felt that the 18-20 year olds would bring less bias into the study than an older group on the premise that they are more naive in identifying bottle designs and more flexible in their beer preferences should a nonreturnable container be recognized.

Design

The experimental design was comprised of five levels of unlabeled containers and three levels of beer composition (brands). The five container levels were divided
into three levels of nonreturnable bottles and two levels of returnables. The three levels of nonreturnables were chosen to represent three distinct levels of container appearance, and the two levels of returnables were chosen on the basis of condition of the bottle (best and worst). Three brands of beer were chosen to conform to three distinct levels of beer quality that would correspond to three distinct levels of nonreturnable container appearance. The three nonreturnable levels had 10 randomly assigned $S$s in each cell and they were randomly paired with the two returnable levels of 15 $S$s per cell i.e. each $S$ received one unlabeled nonreturnable bottle and one unlabeled returnable bottle, in which both contained the same brand of beer.

Procedure

For the three levels of beer composition, it was important to use beers as distinctly different in quality as possible, with the main indicator of quality being price. The highest quality or super premium beer chosen was Michelob which sold for $1.65 per warm six-pack. The nationally distributed premium quality beer chosen was Carling Black Label, for it sold at the competitive middle-range price of $1.28 per six-pack. The economy brand chosen was Old Milwaukee because it sold at the economy price of $.99 per six-pack. Price, however, was not the
sole criterion for selecting the beer brands, for it merely divided the possible list of brands into three groupings. Coupled with price was the need for three distinct levels of nonreturnable containers. Michelob was easily chosen because it stood out as a super premium beer with a uniquely designed bottle. Black Label was picked from the large group of premium beers due to its unique nonreturnable bottle design. The Old Milwaukee brand was chosen because it was an economy beer bottled in a plain nonreturnable container reflecting that image.

To insure that the beer was as homogeneous as possible for each of the three brands of beer, all of the beer was purchased in nonreturnable containers with the same batch number for each brand. After the empty returnable bottles were sorted into two condition groups of best and worst (bottles of intermediate wear were rejected), all of the beer was cross poured from its original container into the container called for in the design of the study. To allow for an inevitable carbonation loss during the cross pouring of the beer, even the beer designated for distribution in its original bottle was poured into another container of the same type. Immediately after pouring, all of the beer was resealed with a plain gold cap.

Each of the 15 cells in the design was identified by a designated letter taken from the middle 15 letters of
the alphabet. A slight "letter effect" had been previously reported in studies of this nature (Tucker, 1964; Jacoby et al., 1971), but only in instances lacking in other pertinent quality cues. For this reason, the "letter effect" was determined to be of little concern. The bottles were labeled with the appropriate symbol by securing a one-inch square of adhesive tape, lettered with a red-felt marking pen, to the face of the bottle.

The distribution of the beer was done by appointment at a time set the previous day during the screening and selection process of the Ss. In addition to the two bottles of beer, a sheet containing instructions and a series of rating scales was distributed to the Ss with the dual purpose of disguising the nature of the study and at the same time obtaining a comparative measure of the perceived quality of the pairs of bottles. To disguise the study, and also instruct the Ss on the proper sampling procedure, the Ss were given the following written information:

This is a marketing study for the purpose of determining beer preferences in the newly formed market of legal beer drinkers in relation to the known preferences of older beer drinkers. The study is being done to discover possible new taste trends that will have an influence on future beer consumption. You will be given two bottles.

1 The State of Michigan passed the Age of Majority Bill January 1, 1972 granting full rights to 18 year-olds (including alcohol privileges).
full unlabeled bottles of beer that are produced by different brewing companies. The beers were chosen because they are representative of differing tastes in beer composition.

To properly taste-test these two brands, pick a time when you have not been drinking previously and are not eating a meal. Open both bottles at the same time, and sample the one first that has been so designated. After a couple of swallows, switch to the second bottle and sample it. Continue this switching process until you reach a decision about the merits of both beers. Then, immediately following your decision, fill out the following ratings concerning these two brands of beer.

To further disguise the study, each S was verbally informed that 15 major brands of beer were being used and that they had been poured into four types of containers. This was added to minimize the chances of a confounding brand image effect resulting from the recognition of any of the nonreturnable bottles, and to also explain the absence of the original cap. To control for a possible "ordering effect" resulting from the order in which each bottle was sampled, the first beer sampled was stipulated and randomly divided 50-50 between returnables and non-returnables.

The five rating scales were provided to comparatively judge the quality of the two bottles of beer for the dependent variable judgments of aroma, strength, smoothness, body, and overall quality. The first four measures were dummy scales to reinforce the purported intent of the study. The only measure actually utilized was overall
quality. The five scales were of the same type as those used by Jacoby, Olson, and Haddock (1971). They consisted of a graphic 0-100 point scale containing 10 numbered graduations and had endpoints labeled "worst beer" and "best beer." For each dependent variable the Ss were instructed to evaluate both bottles in relation to the worst and best beer they had ever tasted, and to rate both bottles on one variable before proceeding (see Appendix A).

In addition to the instructions and rating scales, data concerning the Ss' beer drinking habits and brand preferences were collected. The questionnaires and bottles were collected the following three days by appointment. The instructions, rating scales, and questionnaire are reproduced in Appendix A:
RESULTS

There were three main types of analyses on the data to test the different hypotheses. The primary hypothesis of a significant decrease in the perceived quality of beer bottled in returnables as compared to nonreturnables was tested by a series of dependent sample t tests. Table 1 lists the results of these tests. Carling and Michelob were both significant at the .02 level and Old Milwaukee was significant at the .05 level. The first and main hypothesis is well supported by the data.

The second hypothesis predicted a significant main effect for the three levels of the beer composition variable. This hypothesis stated that there exists actual physical product differences among the three beers reflected by the dependent variable of perceived overall quality. Table 2 reports the degree of support supplied for this hypothesis in a 3 X 3 analysis of variance summary table. The composition main effect fails to achieve any acceptable level of significance (p<.08). However, the direction of the relationship is as predicted, with Michelob receiving a mean rating of 59.5, Black Label receiving a mean of 52.5, and Old Milwaukee receiving a mean of 44.8.

The third hypothesis of a nonreturnable container effect was totally unsupported and is summarized in the
<table>
<thead>
<tr>
<th>Nonreturnable—Returnable Effects</th>
<th>Dependent Sample t Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carling</td>
<td>$t=2.69^{**}$</td>
</tr>
<tr>
<td>Michelob</td>
<td>$t=2.59^{**}$</td>
</tr>
<tr>
<td>Old Milwaukee</td>
<td>$t=2.10^{*}$</td>
</tr>
</tbody>
</table>

* $p < .05$
** $p < .02$
TABLE 2

Nonreturnables X Composition Quality Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>S.S.</th>
<th>d.F.</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>3228.89</td>
<td>2</td>
<td>1614.44</td>
<td>2.77*</td>
</tr>
<tr>
<td>Nonreturnables</td>
<td>973.89</td>
<td>2</td>
<td>486.94</td>
<td>.83</td>
</tr>
<tr>
<td>Interaction</td>
<td>5977.78</td>
<td>4</td>
<td>1494.44</td>
<td>2.56**</td>
</tr>
<tr>
<td>Error</td>
<td>47277.50</td>
<td>81</td>
<td>583.67</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>57458.06</td>
<td>89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .08
**p < .05

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nonreturnable main effect in Table 2.

The two levels of returnable container condition were included to identify the source of the perceived quality differences should they occur in the predicted manner. Because the hypothesis of beer being perceived as better in nonreturnables as compared to returnable containers was supported, it was necessary to run a $2 \times 3$ analysis of variance on returnables and composition quality to detect the reason for this significance. If the beer in the best returnable container was perceived as being significantly better than the beer in the worst returnable container, the previously discovered perceived quality differences between returnables and nonreturnables might be a result of the degree of wear of the returnable bottle and not of the shape and design of the bottle per se. The results of this two-way analysis of variance are given in Table 3, where the returnable wear main effect is shown as nonsignificant.

An unexpected relationship was discovered between each beer composition and its own nonreturnable bottle. The relationship is well displayed in Table 4 where each beer distributed in its own bottle is perceived as being better than when distributed in the other two bottle designs. An even better perspective of this unusual relationship is given in the frequency table for paired comparisons in Table 5. In this table, the pattern of
**TABLE 3**

Returnables X Composition Quality Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>S.S.</th>
<th>d.F.</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>2040.56</td>
<td>2</td>
<td>1020.28</td>
<td>1.74</td>
</tr>
<tr>
<td>Returnables</td>
<td>1000.00</td>
<td>1</td>
<td>1000.00</td>
<td>1.70</td>
</tr>
<tr>
<td>Interaction</td>
<td>331.67</td>
<td>2</td>
<td>165.83</td>
<td>.28</td>
</tr>
<tr>
<td>Error</td>
<td>49390.00</td>
<td>84</td>
<td>587.98</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>52762.22</td>
<td>89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 4

**Cell Means**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Containers</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Michelob</td>
<td>Carling</td>
<td>Old Mil.</td>
<td>Best Returnable</td>
<td>Worst Returnable</td>
</tr>
<tr>
<td>Michelob</td>
<td>66.0</td>
<td>59.0</td>
<td>53.5</td>
<td>40.0</td>
<td>46.0</td>
</tr>
<tr>
<td>Carling</td>
<td>56.5</td>
<td>65.0</td>
<td>36.0</td>
<td>33.3</td>
<td>35.7</td>
</tr>
<tr>
<td>Old Milwaukee</td>
<td>36.0</td>
<td>44.0</td>
<td>54.5</td>
<td>26.0</td>
<td>37.7</td>
</tr>
</tbody>
</table>

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TABLE 5

Frequency Table for Paired Comparisons

<table>
<thead>
<tr>
<th>Composition</th>
<th>Michelob</th>
<th>Carling</th>
<th>Old Mil.</th>
<th>Best Returnable</th>
<th>Worst Returnable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michelob</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Carling</td>
<td>6</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Old Mil.</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

Note.--The four lost votes are ties.
preferences for the nonreturnables is identical to that displayed in Table 4 even though the amount of difference has been ignored. To test for the significance of such a relationship, a t test was run comparing beer distributed in its own nonreturnable bottle with beer distributed in the other two bottles. The t value found was 2.603 which was significant at the .011 level. Further evidence of this finding is displayed in the significant nonreturnable by composition quality interaction in Table 2.

The data collected from the questionnaire concerning the Ss' frequency of brand and bottle identification and general comments are summarized in Table 6. It should be mentioned that all of the three beers correctly identified were those distributed in their own container.
TABLE 6

Questionnaire Information in Frequencies

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mention of beer flatness</td>
<td>15</td>
</tr>
<tr>
<td>Attempts at brand identification</td>
<td>29</td>
</tr>
<tr>
<td>Correct brand identification</td>
<td>3</td>
</tr>
<tr>
<td>Attempts at identification on basis of bottle design</td>
<td>13</td>
</tr>
<tr>
<td>Michelob bottle recognized</td>
<td>8</td>
</tr>
<tr>
<td>Carling bottle recognized</td>
<td>4</td>
</tr>
<tr>
<td>Old Milwaukee bottle recognized</td>
<td>1</td>
</tr>
</tbody>
</table>

Note.—The possible frequency in each category is 90.
DISCUSSION

Of the tests of the three hypotheses, the lack of support for the nonreturnable bottle effect was the most surprising. The absence of any type of direction of relationship indicated that there is no accompanying psychological differences related to the actual physical differences in the three groups of bottle design. This type of finding should have some relevance to the super premium beer producers who spend large sums of time and money designing a nonreturnable bottle that will convey to the consumer the image of distinction and exclusiveness intended for their particular beer. However, this finding might well be highly related to the absence of labeling and the naivete of the Ss.

The failure to achieve a significant relationship for the beer composition quality effect was somewhat of a surprise even though the direction was as predicted. On the other hand, it could be argued that the .08 level of significance did indeed achieve an acceptable level of statistical significance because the direction of relationship was specified which indicates a one-tailed rather than a two-tailed test. A significant effect concerning this independent variable was reported in the Jacoby, Olson, and Haddock (1971) study, but that study used two levels of composition quality differences—present and absent. The
Ss in the composition differences present group received three different brands of beer while the Ss in the composition differences absent group received the same composition in three containers. The differences present group showed much greater variability than the group similar to this study; however, when the composition effect was tested, the two groups were combined and significance was reported. The level of significance for the composition differences absent group (or the group similar to this study) was never reported by itself. Therefore, any comparison of findings concerning this variable between the Jacoby et al. (1971) study and the present study must take these design and analysis differences into account.

Coupled with the lack of significance for the nonreturnable bottle effect, the support of the main hypothesis is especially meaningful. What has been shown is that even though the appearance cue of the different nonreturnable containers is without measurable effect, the appearance or tactual differential between the returnables and nonreturnables is highly significant. It appears that the cue of a beer packaged in a returnable or a nonreturnable container is much more meaningful to the consumer than is the cue of a distinctively styled nonreturnable bottle in regard to differences in perceived quality.

One factor that should be discussed was the partial
carbonation loss or flatness reported by 15 Ss. This loss was a result of the cross-pouring of the beer that left much to be desired as far as experimental control was concerned. As for this particular study, the relative flatness of the beer may have been both beneficial and harmful for it increased the homogeneity of the beer across all levels of beer brands, and therefore focused more upon the container cue than the product differences cue. The nonreturnable-returnable comparison was probably increased in sensitivity, but the composition differences effect was no doubt harmed. Further research of this nature should decide what type of product differences (present or absent) cues are desirable and control for this decision throughout the experiment. Bottling the beer specially at the brewery as in the McConnell (1968) study would be highly desirable (for obvious financial reasons this procedure was not possible in the present study).

By far the most surprising finding was the significant interaction between the nonreturnable bottles and composition quality. The explanation for a beer being perceived of higher quality when packaged in its own distinctive nonreturnable bottle is very difficult indeed. The most attractive explanation is that the Ss perceived a beer as "belonging" in a specific bottle style. The fact that these were young and relatively inexperienced
beer drinkers makes any such relationship highly implausible. The fact that only three beers out of the 180 bottles were correctly identified by the Ss in the questionnaire makes such an explanation even more unlikely. The explanation would have to include an unconscious recognition of the brands and the bottles used by those brands, which is obviously questionable, although worthy of further exploration.

The only other possible explanation for this phenomenon (one preferred by this observer) is that the lack of control during the cross-pouring procedure was somehow made manifest when the beer distributed in its own bottle style was sampled. This is to say that perhaps the beers distributed in their own containers suffered less carbonation loss than did the other bottles of beer. It should be reiterated that all of the bottles were cross-poured including those distributed in their own bottle. Further research of this result is necessary.
SUMMARY

The main purpose of this study was to test the effect of the returnable container on the perceived quality of a beer as compared to the nonreturnable container. A secondary hypothesis was that the design appearance of the nonreturnable bottle would also significantly affect the perceived quality of the product. The last hypothesis was that there exists a significant difference in perceived product quality directly related to the quality of the beer itself (as dictated by price).

The Ss were 90 male undergraduate students between the ages of 18 and 20 years. Each S received two full bottles of beer in his residence, both of which were unlabeled, recapped, and filled with the same beer composition. One was a nonreturnable container and the other was a returnable container. Three levels of beer composition were used in conjunction with five levels of containers. The container variable was composed of three levels of nonreturnable bottles and two levels of returnable bottle condition (best-worst).

The perceived quality of the beer in returnables relative to nonreturnables was found to be significantly lower for all three brands. The effect of beer composition differences on perceived quality did not reach significance, but was in the predicted direction. The
nonreturnable container design appearance exhibited no
effect on perception of product quality. An unexplained
significant enhancing effect of beer distributed in its
own nonreturnable container was found which indicated
additional research was necessary.
REFERENCES


APPENDIX A

Instructions

This is a marketing study for the purpose of determining beer preferences in the newly formed market of legal beer drinkers in relation to the known preferences of older beer drinkers. The study is being done to discover possible new taste trends that will have an influence on future beer consumption.

You will be given two full unlabeled bottles of beer that are produced by different brewing companies. The beers were chosen because they are representative of differing tastes in beer composition.

To properly taste-test these two brands, pick a time when you have not been drinking previously and are not eating a meal. Open both bottles at the same time, and sample the one first that has been so designated. After a couple of swallows, switch to the second bottle and sample it. Continue this switching process until you reach a decision about the merits of both beers. Then, immediately following your decision, fill out the following ratings concerning these two brands of beer.
APPENDIX A (cont'd)

Ratings

Put an arrow on the scale for each beer according to how you feel it rated on a particular taste quality, and then label the arrow with the corresponding letter appearing on the bottle. Evaluate these samples in relation to the best or worst beers that you have ever tasted. Rate both on one quality before going on to the next.

<table>
<thead>
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<th>A</th>
<th>B</th>
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</thead>
<tbody>
<tr>
<td><strong>Aroma</strong></td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worst</td>
<td>Best</td>
</tr>
<tr>
<td><strong>Aroma</strong></td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worst</td>
<td>Best</td>
</tr>
<tr>
<td><strong>Strength</strong></td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worst</td>
<td>Best</td>
</tr>
<tr>
<td><strong>Smoothness</strong></td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worst</td>
<td>Best</td>
</tr>
<tr>
<td><strong>Body</strong></td>
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<td></td>
</tr>
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<td><strong>Overall Quality</strong></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Worst</td>
<td>Best</td>
</tr>
</tbody>
</table>
APPENDIX A (cont'd)

Questionnaire

Age? _____

What is the average number of occasions that you drink beer in a week?

- Less than one _____
- One to three _____
- Over three _____

What is your favorite brand of beer irregardless of price? ____________

What was the last brand of beer that you purchased? ____________

What is your least favorite brand of beer? ____________

Did you recognize any of the brands used in this study? ___

If so, which one or ones? ____________