Names that sound larger lead consumers to pay more and eat less—a beneficial outcome for industry and consumers alike.

Industry Report on:

One Man’s Tall is Another Man’s Small: How the Framing of Portion Size Influences Food Choice


Through the studies summarized in this report, IBECC experts Dr. David Just and Dr. Brian Wansink set out to explore how normative labels such as “Large” or “Super-size”, often used by the food industry to describe portion sizes, influence consumer choice regarding amount chosen, consumed and wasted.

Read on to learn how the studies were conducted, what IBECC researchers Dr. Just and Dr. Wansink found, and the key takeaways for your business.

1. Rationale

The use of normative portion size labels raises two important questions. First, how is consumer valuation of a selection influenced by size labels holding the size options constant? Suppose, for example, that individuals are willing to pay more to purchase items that have larger sounding names irrespective of size. In this case, it should be possible for firms to reap larger profits by offering smaller portions with larger names (Mohr, Lichtenstein, and Janiszewski 2012). Second, does the size label influence how much the consumer decides to eat? If individuals are responding to normative names rather than actual sizes, increasing the size suggested by the label could be an effective strategy to address both health and profit concerns. Such labels could potentially reduce consumption without restricting the physical quantity of the food being offered, and potentially increase profits.

2. Background

Firms often use normative labels such as “Large” or “Super-size” to describe their products’ portion options, especially food manufacturers, retailers and restaurants (particularly quick service formats). Normative labels such as “regular” or “large” inform the consumer on the size of the portion relative to a hypothetical normal, or regular amount. In most cases these labels are proportional (e.g., medium vs. large or short vs. tall) and are sometimes accompanied by more accurate size descriptions such as with Wendy’s “⅓ lb. Single”, “½ lb. Double” or “⅔ lb. Triple” burgers. How do normative labels affect consumers when such objective size information is also available?
Normative labels may influence consumer preference over portion sizes in several ways, and the particular mechanism will influence which strategies are most advantageous. The most prominent theories suggest that consumers use names either as a social norm or as a reference point in decision-making. If using the name as a social norm, consumers will feel an urge to select the suggested norm (“normal”, “regular” or “medium”) size to comply with the implied social norms. If consumers treat the name as a reference they will also be willing to pay more per unit to upgrade to the suggested norm than they would to upgrade beyond the norm. This is some of the theory behind volume discounts applied for larger sizes. Alternatively, consumers may use the normative names as objective information about the actual amount of food. In this case, consumers would be willing to pay more per unit to upgrade beyond the norm, and may not necessarily seek out the suggested norm.

3. Research Description

The researchers conducted two field studies. College students and staff ages 18–55 years old participated in the studies which were conducted in an a la carte cafeteria on campus. Participants were recruited from patrons who were entering the dining facility. They were given each $15.00 in cash to purchase their lunch and told to keep any portion of the money not spent. Diners could purchase spaghetti, chef’s salad, rolls, soft drink, water, and pudding. The foods in the study were identical to those offered in the dining facility and were chosen for their familiarity and relative popularity among the sample population.

In both studies spaghetti, salad, and pudding were each offered in two different sizes—one exactly twice as large as the other. Spaghetti was available in either one cup or two cup portions with either 3/8 or 3/4 cups sauce, respectively. The pudding and the salad were available in either 3/4 or 1 ½ cup portions. For practical purposes these correspond to small and large portions, respectively, but for the studies the naming of the portion sizes were changed between treatments. In the HALF treatment the small portions were labeled ‘half-size’ and the large portions were labeled ‘regular’. In the DOUBLE treatment, the small portions were labeled ‘regular’, and the large portions were labeled ‘double-size’ (see Table 1).

<table>
<thead>
<tr>
<th>Sizes</th>
<th>Spaghetti</th>
<th>Chef's salad</th>
<th>Chocolate pudding</th>
<th>Treatment Labels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>1 cup pasta, 3/8 cup sauce</td>
<td>3/4 cup greens 1.5-oz. dressing packet</td>
<td>1/4 cup pudding</td>
<td>HALF: Half, DOUBLE: Regular</td>
</tr>
<tr>
<td>Large</td>
<td>2 cups pasta, 3/4 cup sauce</td>
<td>1 1/2 cup greens 1.5-oz. dressing packet</td>
<td>1 1/2 cup pudding</td>
<td>HALF: Regular, DOUBLE: Double</td>
</tr>
</tbody>
</table>

Study 1: Framing and Willingness to Upgrade

The objective of this field experiment was to find out whether consumers have a higher willingness to pay per unit below or above the suggested normal size. Sizes were kept constant but labeled differently depending on the treatment and participants were randomly assigned to either the HALF or the DOUBLE treatments described in Table 1.

How was this study conducted?

A total of 45 diners participated in one of two lunch sessions. Upon entering the dining area participants were given their money and told they would be participating in an auction to determine the food they would purchase. They were shown displays of the different portions of each food with signs prominently labeling their size. Rolls, soft drinks, and water had set prices at levels that were common in the local
dining facility. The auction mechanism was explained, and several examples were given after they had viewed all the food items. Diners were asked to place a bid on the small size for spaghetti, salad, and pudding ($bs$). Then, they were asked to bid on an upgrade to the larger size ($d$). They were also informed that the sum of these two numbers $bl = bs + d$ constituted their bid for the larger size. After bids were placed, prices for each food size were determined and food was delivered to the diner’s table if they had bid more than the selected price. Diners were assigned to treatments based on the day in which they participated.

**What did IBECC researchers find?**

Figure 1 shows that the bid for each food significantly increases when the normative label suggests a larger size. All willingness to pay amounts were significantly smaller for the smaller normative size (HALF) than for the larger normative-size (DOBLE). Results for all three foods violate the loss aversion theory, according to which the willingness to pay to upgrade ($d$) to the larger size from the small size under the HALF treatment should be larger than under the DOUBLE treatment. This may indicate that individuals were using the names as information rather than as a reference point or social norm.

![Figure 1. Average Bids by Treatments](image)

*Note: this figure presents the uncontrolled mean bids for each of the foods. Statistical information on these results is available in Table III of the published paper.*

For a robustness check of these results researchers ran tests controlling for demographics (gender alone, and gender, height, weight and age combined) and found that, even though significance is diminished for salad bids, the other relationships retained significance (*for detailed statistical results see Table IV in the published paper*).
What do these results mean?

Results from this experiment suggest that:

- The reason these labels influence people is not because it suggests a social norm, as originally suspected, or because it produces feelings of loss or gain
- Willingness to pay per unit to upgrade is significantly more when moving from the normative size to a larger size than when upgrading to the regular from a smaller size.
- There is evidence that people are using these labels as objective information about the size of the portion, in spite of the food being clearly visible
- This may mislead consumers as to how much they ultimately consume

Study 2: How Do Portion Size Labels Bias Actual Consumption?

The objective of this field study was to see if individuals use the size labels as information about how much they should consume. Researchers hypothesized that if consumers believe that the labels convey true information about relative size, an individual consuming the larger portion may leave more when it is labeled a ‘double’ than when it is labeled a ‘regular.’

How was this study conducted?

Initially 134 diners were recruited and randomly assigned to either the DOUBLE or the HALF treatment and encouraged to participate in two separate lunch sessions, two weeks apart. Some attended only the first session so additional participants were recruited to participate only in the second session, for a total of 172 participants. As they entered the facility participants got in line in the serving area passing displays of each available food for the day, with signs prominently labeling the size. When their turn came they would place their order, pay for their food and sit in the dining area, where one of the lab workers delivered their order. Once they were done with their meal, a lab worker would retrieve their tray and hand them a survey to be filled out. Each participant’s tray was then taken to the serving area where the weight of the foods remaining on the tray (waste) were recorded and later attached to the corresponding survey.

In the first week participants assigned to the DOUBLE treatment were presented with the smaller portions of each food labeled as the ‘regular-size’; in the second week they were presented with the larger portions labeled as the ‘double-size’. Participants assigned to the HALF treatment, were presented with the larger portions of each food labeled as the ‘regular-size’ in the first week, and with the smaller portions labeled as the ‘half-size’, in the second week.

What did IBECC researchers find?

Figure 2 illustrates the results for plate waste in weeks 1 and 2 for both treatments. They show that individuals tend to leave more on their plate when they are told they are consuming a larger than normal portion. For the large spaghetti, for example, individuals receiving the larger label left ten times as much as those receiving the smaller label. These differences are significant for all sizes and foods aside from the large size of pudding and salad where the relationship is insignificantly reversed. This appears to be due to less individuals purchasing pudding in general, but also to a larger portion taking the pudding when it was given a smaller size label. It may be because many individuals wanted to avoid eating too much of the dessert or they found the oversize portion unappealing.
Results also illustrate how the change in size labeling might influence overall consumption. For the sessions with the larger sizes, the reduction in calories consumed when given a larger name was substantial: total calories consumed was reduced 41% from 463 to 305. For spaghetti, the decline in calorie consumption was about 63%.

Like in the previously described study, to check for robustness of these results the researchers ran tests controlling for demographics (gender alone and gender, height, weight and age combined) and found that the results largely uphold those presented in Figure 2, although the effect of the treatment on plate waste for pudding and salad failed to be significant in some cases (for detailed results consult Table VI in the published paper).

**What do these results mean?**

From the purchasing and consumption behavior exhibited by participants in this study researchers draw the following key conclusions:

- It appears that individuals not only judge the amount to purchase, but also their satiation point by the normative labels applied to the foods
- Although individuals did not purchase more with larger size names, they used the names to judge what portion of the food they should eat
- The information contained in the labels appears to supersede any sensory experience of satiation. For example, when eating the large size, on average, individuals left 20 grams of spaghetti if labeled ‘double-size’ and only 2 grams, on average, if labeled ‘regular’. Similar results were obtained for the small size salad when labeled ‘regular’ versus ‘half-size’.

Note: this figure presents the uncontrolled values of waste for each food. Total calories consumed, participants purchasing each food and statistical information on all results is available in Table V of the published paper.
4. Takeaways for Your Business

Key Takeaway:

Consumers are willing to pay more for foods with names that suggest the portion is larger. Consumers also eat less per sitting when food portions are given names that suggest the portion is larger. This is a beneficial outcome for industry and consumers alike.

Other Important Takeaways

- Consumers appear to treat the normative size labels as objective information, which then influences both their willingness to pay for the food item and the amount they choose to consume.
- Consumers respond to normative-size labels independently of the actual size of the products.
- They are responding to normative labels primarily for their rule-of-thumb informational content rather than due to a more complex mechanism.
- Consumers appear to be willing to pay more per unit for increases above the suggested normal size: upgrading from a ‘regular’ to a ‘double’ is relatively much more valuable for them than upgrading from a ‘half’ to a ‘regular’.
- Firms may be able to address unhealthy consumption levels while maintaining or increasing profit levels by using portion names that suggest larger than normal sizes.

Caveat

While this study finds that consumers respond to label size suggestions independent of the actual size, there are clearly limits to this relationship. If the name suggests a portion that is clearly and obviously bigger than what the consumer receives, this relationship is likely to break down.

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*This is an industry-focused summary of the publication cited below.*

For references cited and additional information please consult the published paper: