

 | WHITE PAPER

Visual Attention to In-Store Marketing: The Role of Secondary Packaging in Brand Awareness

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Executive Summary

Countless studies, reports and blogs state that today's consumer has less time to devote to the traditional shopping trip. The path to purchase has also changed dramatically in the past decade with mobile technology, the internet and shopping apps all playing a part. In a continuing study spanning more than five decades, POPAI, Point of Purchase Advertising International, reports shoppers are now making over three-quarters (76%) of their purchasing decisions in-store (2012). The study goes on to say that the single greatest factor in that decision making is in-store marketing at the point of purchase.

This white paper reports on a study conducted by Rehrig Pacific Company and Clemson University to investigate the hypothesis: **A unique secondary package design with on-message, brand building color and graphics can lift brand awareness and increase purchase intent** when integrated into in-store marketing campaigns.

In order to test this hypothesis, measurable data was required. In a study published by the European Association of Communications Agencies (ESOMAR), Scheier, Egner and Steffens (2003) demonstrate that a consumer's attention at the point-of-sale, measured by tracking visual motor behaviors such as eye movement, eye fixation and fixation duration, is a strong indicator of branding and purchase intention. To collect such data as it relates to secondary packaging a study of consumers in a controlled shopping atmosphere was chosen.

Reusable packaging (plastic crates or "shells") for 2-liter bottles of carbonated soft drink was chosen for the study. Rehrig manufactured a new proprietary reusable crate in a color that exactly matched the 2-liter label color and included a multi-

color logo of the major US beverage company. The branded proprietary reusable crate was evaluated against a standard reusable crate (standard crate) in the industry used by the same US beverage company. Testing was conducted using state-of-the-art eye tracking hardware and the CUshop™, a full immersion consumer retail experience laboratory.

Data captured from 89 study participants indicates a strong preference for the product display incorporating the new branded reusable crate. Statistical analysis demonstrates a 47% increase in eye fixations on the branded display and an increase in fixation duration, a measure of how long consumers looked at the display, of 34%. More significantly, an increase in the visual saliency of the primary package, the 2-liter bottle, was illustrated by an increase in fixation duration of 46% and an increase of the number of fixations of 54% when displayed in the branded reusable crate.

Thus, results indicate in-store marketing incorporating a unique secondary packaging with on-message coloring and graphics will lift brand awareness and increase purchase intent.

Introduction

The result of several years of a sluggish economy is greater pressure on marketers to drive brand growth. With 76% of consumers' purchasing decisions being made in-store and being heavily influenced by point-of-purchase marketing material, product packaging has the opportunity to be one of the greatest influencers in the formation of consumers' brand preferences.



FIGURE 1
The retail marketing funnel

To lift brand awareness and drive growth at the point-of-purchase a product must grab the consumer's visual attention and do so with the consumer's first impression. This is the first step in driving consumer behavior through the retail marketing funnel from a first impression through to purchase (see Figure 1).

For food products specifically, the packaging's ability to capture attention has been shown to increase the probability of purchase (Garber, 1995; Garber et al., 2000). Visual attention, as stated by Pieters and Warlop (1999), has a significant positive effect on brand choice and is "a vital and often the only way to acquire information about brands in consumer choice contexts." Numerous studies, including a 2007 study by the Wharton School of Business (Chandon et al., 2007) have proven a positive and significant relationship between consumer attention and purchase intent (Hurley et al., 2012; Klockner pentaplast, 2012). One such study reports that, "in addition to branding, consumer attention also increases purchase intent, in particular first choice of purchase." (Scheier, Egner and Steffens, 2003)

This study seeks to add to the body of knowledge by investigating the hypothesis: **A unique secondary package design with on-message, brand building color and graphics can lift brand awareness and increase purchase intent** when integrated into in-store marketing campaigns.

Methodology

Testing of the hypothesis was carried out at Clemson University's CUshop™, an immersive shopping environment used to test consumer behavior. Participants in the study were equipped with eye-tracking hardware as a means of recording the areas to which their attention was directed during a simple shopping task. In order to gauge attention patterns, the eye-tracking technology capitalizes on the fact that attention coordinates eye movement.



FIGURE 2
The stimulus as presented on day 3 of the study — CSD in standard reusable crates are shown on the left and CSD in the branded reusable crates are shown on the right

The specific types of secondary packaging used in the study were reusable plastic crates for 2-liter bottles of carbonated soft drink. The reusable crates were designed and manufactured by Rehrig Pacific Company. Specifically for this purpose, a new proprietary reusable crate was introduced, manufactured with the exact label colors and multi-color logo of a US beverage company.

This branded reusable crate was evaluated against a standard crate in the industry. The standard reusable crate is manufactured in a non-specific shade of the same color, blue, and does not feature a logo in offset or company specific colors.

The reusable crates were filled in equal number with regular and diet varieties of a popular carbonated soft drink (CSD). (Figure 2) Competing brands of CSD were not included in order to focus the study on package design rather than brand loyalty. All CSD was displayed in reusable crates, again to focus the research and eliminate any factors that may have led to the collection of erroneous data.

DATA FOR THREE PRIMARY EYE-TRACKING METRICS WAS COLLECTED. THE METRICS ARE DEFINED AS:

- **Fixation Count**
The number of fixations (a stabilization of the eye indicative of cognitive processing) a participant had on a particular object or region.
- **Fixation Duration**
The amount of time, in seconds, a participant spent looking at a particular object or region.
- **Time to First Fixation**
The amount of time, in seconds, it took a participant to fixate on a particular object or region, measured from the time they were in visual range of the object or region.



The standard product AOI

The standard reusable crate AOI

The standard combined AOI

FIGURE 3
Exemplar
AOI schema

Methodology (continued)

The stimulus, the reusable crates and product combined, was delineated into three areas of interest (AOIs) shown below, consisting of the products alone (top left), the reusable crates alone (top right), and the combined CSD space (bottom). (see Figure 3) Delineating the stimulus in this manner allowed separation of fixation data between the reusable crates and the product.

THE AOI ARE DENOTED AS:

- **Standard Product AOI**
The area of the bottles only when in a standard reusable crate
- **Branded Product AOI**
The area of the bottles only when in a branded reusable crate
- **Standard Reusable Crate AOI**
The area of the standard reusable crates only
- **Branded Reusable Crate AOI**
The area of the branded reusable crates only
- **Standard Combined AOI**
The area of the bottles and standard reusable crates combined
- **Branded Combined AOI**
The area of the bottles and branded reusable crates combined

Apparatus

The participants eye movements were tracked using Tobii eye-tracking glasses. (Figure 4) The glasses are of an ultra-light design, looking similar to reading glasses. Used in conjunction with a recording unit and infrared (IR) markers, participants' eye movements can be recorded by following the movement of the right pupil. Data is recorded at a rate of 30 times per second. The IR markers allow for automated mapping and data aggregation.



FIGURE 4
Tobii eye-tracking glasses

Participants

101 participants (49 male, 52 female) took part in the study. During the analysis, 12 participants were removed from consideration for poor calibration or failure to follow the study instructions, leaving 89 participants (44 male, 45 female).

Participants ranged in age from 18 to 79 years with a mean age of 31.2 years. The income range distribution of the participants was diverse, ranging from less than \$24,999 to over \$200,000 annually.

For taking part, participants were given \$25.00 gift cards to either Wal-Mart or Starbucks.

Experimental Design and Procedure

The experiment was designed as a simple shopping task. Participants were given a shopping list with several categories of items, one of which was carbonated soft drinks, and instructed to visit the shop as they would during a normal shopping trip. However, in this instance, they were asked to write down their selection for each category. They were instructed not to pick up any products but instead to write down the product name.

The study was carried out over three days with the only manipulation being a variation in which reusable crate was present. On the first day only standard reusable crates were displayed, the branded, or new reusable crates, were displayed on the second day, and on the final day of testing both reusable crates were displayed side-by-side. Testing on the third day was performed only to provide a side-by-side comparison; the data was not included in the analysis. Again, this was done to avoid slanting the results.

Participants were given no foresight into what form of packaging the carbonated soft drink would be in or what type of carbonated soft drink would be available. After selecting a product for each item on the shopping list and exiting the shop, participants were asked to complete a survey collecting basic demographic information and several preference questions regarding shopping. Participants were also asked several open-ended questions attempting to determine the source of their decisions.

Results

The recorded eye movement data was exported from Tobii Studio and statistically analyzed.



FIGURE 5
Exemplar scanpath for the branded reusable crate illustrating the order and path of participants' eye fixations

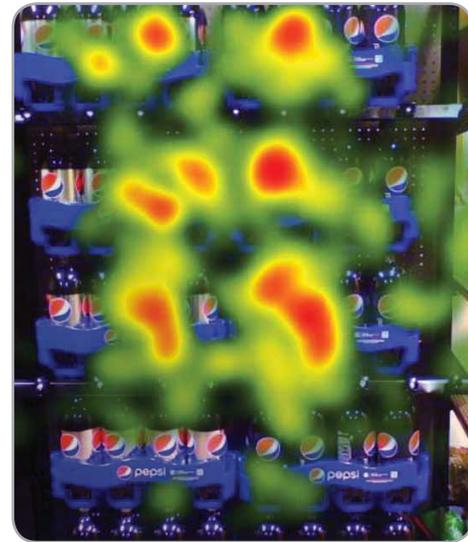


FIGURE 6
Aggregate heatmap illustrating fixation location for all participants

Analysis of **fixation count** revealed a significant difference favoring the branded combined AOI (area of the bottles and reusable crates combined) and the branded product AOI ($p < 0.05$), but there was no significant difference between the two reusable crate AOIs ($p > 0.05$). The aggregate scan path for the branded reusable crate is shown in Figure 5.

With respect to **fixation duration**, there was a significant difference between the standard product AOI and the branded product AOI ($p < 0.05$). The branded product AOI received significantly longer fixation

duration. Similarly, there were significant differences favoring the branded combined AOI ($p < 0.05$) and branded reusable crate AOI ($p < 0.01$). (Figure 6)

Lastly, for **time to first fixation**, there was a significant difference ($p < 0.01$) favoring the branded reusable crate AOI, meaning participants looked at the branded reusable crates quicker. However, no significant difference ($p > 0.05$) was found for the combined AOI or product AOI

Graphical representations as well as scanpath and heatmap illustrations of the results are shown in the appendix.

Discussion

The results indicate that the branded secondary packaging (the reusable crate) did significantly impact the shopper's attention patterns. Most importantly, both the fixation count and fixation duration increased for the branded product AOI (fixation count data shown in Figure 7) and the branded combined AOI.

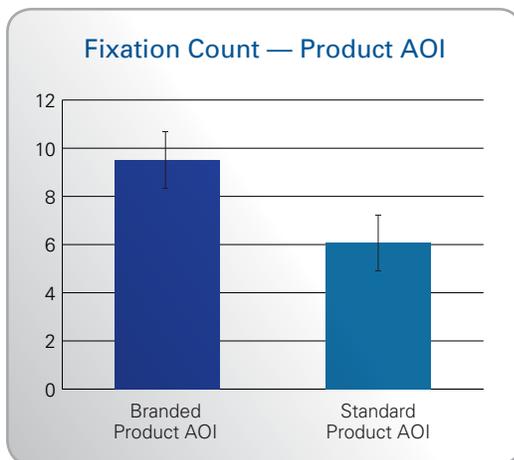


FIGURE 7
Graphical representation of the fixation count data for the product AOIs

Evaluation of the fixation count results for the product and combined AOIs indicated significant increases in fixation count for the branded AOIs. Referring to the methodology of the study, the only variable that changed from standard to branded AOIs was the reusable crate. As it relates to the hypothesis, this indicates that a change from the standard reusable crate to a branded reusable crate did drive an increase in shopper attention on both the combined AOI and, more relevantly, on the product AOI.

Evaluation of the fixation count results for the reusable crate AOIs indicate that although there was a higher fixation count on the branded reusable

crate AOI, it was not statistically significant and could essentially be due to random chance. This may indicate participants looked at the standard and branded reusable crates about as often, but while looking at them, spent longer looking at the branded reusable crate.

Similarly, analysis of the fixation duration results indicates that a change to branded reusable crates did drive an increase in shopper's attention in all three categories of AOI. This demonstrates an increase in the shopper's cognitive processing of the information presented in the branded displays.

Time to first fixation (TTFF) results for the reusable crate AOIs do indicate a significantly shorter period for participants to fixate on the branded reusable crate AOI. However, TTFF results for the product and combined AOIs indicate participants found the AOIs in approximately the same amount of time. The numerical differences in these categories were most likely due to random chance or insufficient statistical power. Given the extremely small variations (a difference of 30ms in the time to first fixation) this is not terribly surprising, such a limited time frame is unlikely to be sufficient for cognitive processing to occur. Given that TTFF is generally an auxiliary metric and not one considered to be as significant an indicator of cognitive attention as fixation duration, this metric does not provide significant data for or against the hypothesis.

Conclusion

It can be concluded that statistical evidence from this study does support the hypothesis and prove that unique secondary package design with on-message, brand building color and graphics can lift brand awareness and increase purchase intent.

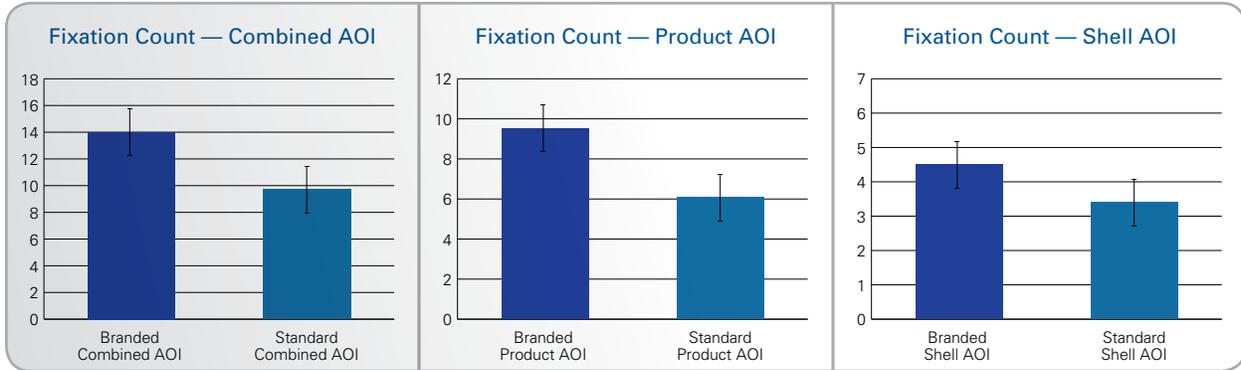
A PORTION OF THE SIGNIFICANT RESULTS OF THIS EXPERIMENT CAN BE SUMMARIZED IN SOME REVEALING BULLET POINTS:

- The **product in the branded reusable crates** received **54% more fixations**
- The **product in the branded reusable crates** was looked at for **46% more time**
- The product in the branded reusable crate was looked at 10% quicker
- The **combined area of the product and the branded reusable crate** received **47% more fixations**
- The **combined area of the product and the branded reusable crate** was looked at for **34% more time**
- The combination of the product and reusable crate was looked at 10% quicker
- The branded reusable crates were looked at for 13% more time
- The branded reusable crate received 32% more fixations
- The branded reusable crate was looked at 93% quicker

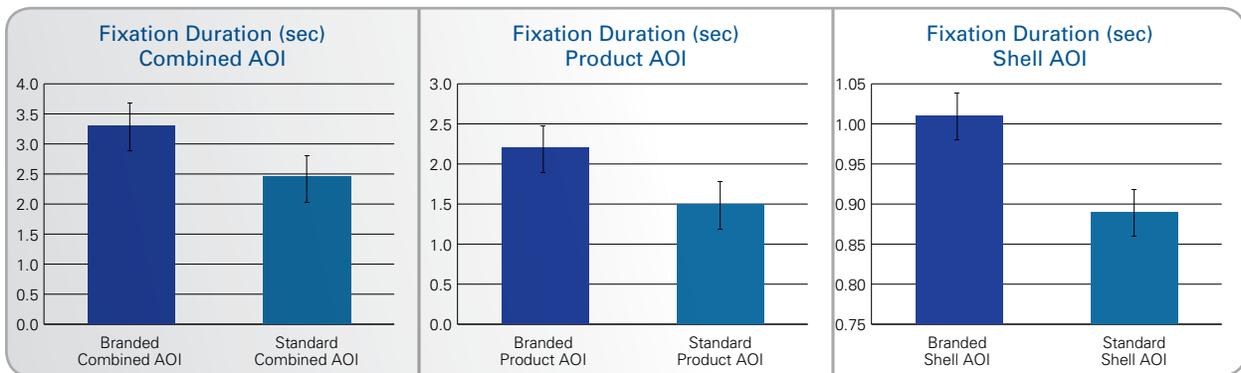
As stated above, eye movement data from this study illustrates significant increases in shopper attention on the product being displayed. Viewing these results in conjunction with the results of corroborating studies as referenced above does indicate substantial increases in consumer's cognitive processing of the product in the display and, therefore, increase in their intention to purchase the product.

Therefore, it can be concluded that statistical evidence from this study does support the hypothesis and prove that unique secondary package design with on-message, brand building color and graphics can lift brand awareness and increase purchase intent.

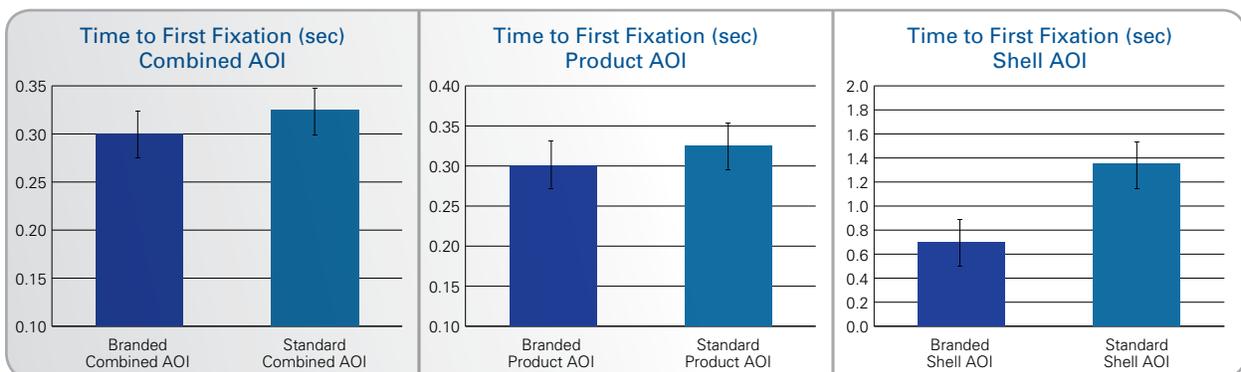
Appendix



Fixation Count – Graphical representation of the fixation count data for the all AOIs; larger bar height indicates participants fixated on the indicated area more frequently



Fixation Duration – Graphical representation of the fixation duration data for the all AOIs; larger bar height indicates participants fixated on the indicated area for a longer period of time



Time to First Fixation – Graphical representation of the Time to First Fixation data for the all AOIs; shorter bar height indicates participants fixated on the indicated area for more quickly

Appendix



Heatmap illustrations for days 1 (standard AOIs), 2 (branded AOIs) and 3 (standard AOIs on left, branded AOIs on right), respectively

Scanpath illustrations for days 1 (standard AOIs), 2 (branded AOIs) and 3 (standard AOIs on left, branded AOIs on right), respectively

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