



# SPECIALTY COATINGS and their IMPACT on CONSUMERS

In cooperation with















Study conducted in cooperation with:











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# Executive Summary

# Without research, brands are wasting their packaging dollars on specialty coatings that fail to attract the consumer.

In the past few years, our customers have been asking us how to utilize specialty coatings on their packaging. The guestions our customers had were: how to use specialty coatings? When should you use specialty coatings? Why would we want to use specialty coatings?

Quad and Package InSight teamed up to develop this revolutionary study that tests the hypothesis of whether or not using specialty coatings

on packaging increases consumer engagement and sales. Five nationally known brands were used for this study. Each of the five brands had 4 different prototypes developed that had different coatings.

When analyzing the data, we found that it was difficult to compare each product to one another due to the varying differences between the data. We found that the results of the use of specialty

coatings is subjective. How the specialty coating effects the way consumers perceive your product will depend on the product category, your product, and the consumers themselves. Rather than investing the dollars into specialty finishes prior to understanding how they will affect the consumer, we suggest testing the packaging before releasing it to the market.



66 Our Quad roots make us unique business partners going beyond packaging inviting customers to imagine more.



Intimately understand your category – enhancements emphasize your message and influence shopper perception and user experience.

- Dr. Andrew Hurley



# Introduction

Do specialty coatings on packaging have an effect on consumer's purchasing decision? This has been questioned by most who invest in enhancements. This study takes a closer look into the different kinds of coatings a company could use on their packaging and whether or not they increase consumer attention and sales.

Over the years, marketing departments have gotten overly complex; Quad is here to fix that. With our integrated marketing solutions, we put content first, while integrating print and digital media.

With this study, we are hoping to answer the following questions:

### How to use specialty coatings?

• What factors should I take into consideration when deciding to use a packaging enhancement?

### When should you use specialty coatings?

• Are there times when a simple coating would be more effective?

### Why would you use specialty coatings?

• Do these coatings affect certain areas of the package more than other areas?

» Retail Laboratory -Package Insight



# Our Method



Research was conducted by Package InSight LLC, a member of Clemson University's Sonoco Institute of Packaging Design and Graphics, that studies package performance, consumer attention and shelf impact. Package InSight adheres to a strict methodology that has been published in multiple academic journals, reviewed by blind peer-review processes, and trusted by numerous consumer packaged goods companies. They also incorporate the latest in biometric technology, such as mobile eye-tracking.

# Statistical Relevance

Package InSight conducted in-context, primary research using their state-of-the-art Main St. Retail Laboratory. Researchers used 5 nationally known brands with specialty coatings on each packaging.

Each product was inserted into a competitive planogram where participants shopped naturally. At least 30 participants are needed for an analysis based upon the normal distribution to

be valid (t-test, ANOVA) – it represents a threshold above which the sample size is no longer considered "small." A total of 138 participants were used for this study.



### T-Test

The t-test is described as the statistical test that examines whether the population means of two samples greatly differ from one another, using t-distribution which is used when the standard deviation is not known, and the sample size is small. It is a tool to analyse whether the two samples are drawn from the same population.

The test is based on t-statistic, which assumes that variable is normally distributed (symmetric bell-shaped distribution) and mean is known and population variance is calculated from the sample.

In t-test null hypothesis takes the form of H0:  $\mu$ (x) =  $\mu$ (y) against alternative hypothesis H1:  $\mu$ (x)  $\neq$   $\mu$ (y), wherein  $\mu$ (x) and  $\mu$ (y) represents the population means. The degree of freedom of t-test is n1 + n2 – 2

### **ANOVA**

Analysis of Variance (ANOVA) is a statistical method, commonly used in all those situations where a comparison is to be made between more than two population means like the yield of the crop from multiple seed varieties. It is a vital tool of analysis for the researcher that enables him to conduct test simultaneously. When we use ANOVA, it is assumed that the sample is drawn from the normally distributed population and the population variance is equal.

In ANOVA, the total amount of variation in a dataset is split into two types, i.e. the amount allocated to chance and amount assigned to particular causes. Its basic principle is to test the variances among population means by assessing the amount of variation within group items, proportionate to the amount of variation between groups. Within the sample, the variance is because of the random unexplained disturbance whereas different treatment may cause between sample variance.

# Project Set-Up

The study included a total of 138 participants. Participants were screened prior to the study to determine if they met the qualification criteria. Participants needed to be the primary shopper in their household or shared shopping responsibility.

A total of 20 packages were made, which were categorized into four groups – group A,B,C,D. Each group contained all five products with different specialty coatings.

### **PRODUCTS**

### Hot Cocoa

Swiss Miss Milk Chocolate Hot Cocoa Mix - New Improved Flavor

### Tea

Bigelow Benefits -Lemon & Echinacea Herbal Tea

### **Multivitamin**

Nature's Way -Alive Once Daily Women's Ultra Potency

### Lip Balm

Carmex Classic Lip Balm - Medicated Cherry Flavor

### Men's Underwear

Hanes Men's Boxer Briefs - X Temp Performance













### **VARIABLES**

**Group A**Full Matte Coating











**Group B**Full Gloss Coating













Group C

Gloss Coating with Matte spot coating













**Group D** 

Matte Coating with Gloss spot coating













Eye-tracking is a term describing the techniques used to measure a person's point of gaze, providing insight into what draws in an observer's attention and cognitive processes. The technology follows the eye of the subject, tracking their

consumers will make their purchase decision after only looking at the front of the package, and 85 percent of these consumers will purchase an item without having picked up any alternative products. People buy with their eyes,

areas of interest on an object – specifically, a package.
Packaging designers may aggregate data to show which areas of the package attract the most attention and, equally as important, where attention is void.

# Eye-Tracking Technology



exact eye movements while looking at an object or area, and identifying precisely how quickly, how long, and how many times a person looks at an area of interest. The data is recorded at 50 times per second.

Eye-tracking is so important because 90 percent of

indicating that the visual stimuli present at the point of sale will influence the consumer's decision to purchase. Even though the subject may not be aware of how their gaze moves about and focuses on different areas, a researcher can collect eye-tracking information and form opinions about different

In order to differentiate and maintain relevancy with market demands, designers and product developers leverage eye-tracking to observe and analyze how consumers shop within the grocery store.









# No specific reason but my eyes are drawn to shiny products.

### Purchase Decision (PD)

Measures how many participants choose to buy the item. *The* higher the number, the better the package performed.

### Total Fixation Duration (TFD)

The time, in seconds, spent on average by participants fixating on this item. The higher the number, the better the package performed.

### Time to First Fixation (TTFF)

The time, in seconds, from when a product first enters a participant's field of view until they fixate on it. The lower the number, the better the package performed.

### Fixation Count (FC)

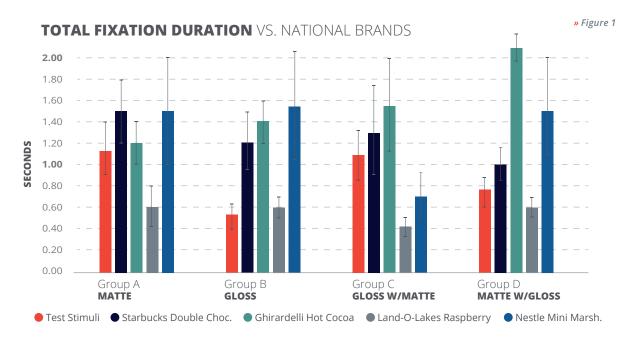
The total number of times a participant's scan of the planogram crossed into a particular area of interest. The higher the number, the better the package performed.

# Perceptual ROI

When consumers are looking through the shelves they are simultaneously evaluating your packaging. They are assigning a value to the color(s) being used, the material used on the

packaging, the design of the packaging, among other things. With all those variables coming into play, does a specialty coating lead to more eye traffic for a product? For each tract (Hot Cocoa, Tea, Multivitamin, Lip Balm, Men's Underwear), we chose 4 opposing SKU's to visually represent how our test stimuli faired vs. national brands in a simulated retail setting.

### **HOT COCOA - EYE TRACKING METRICS**



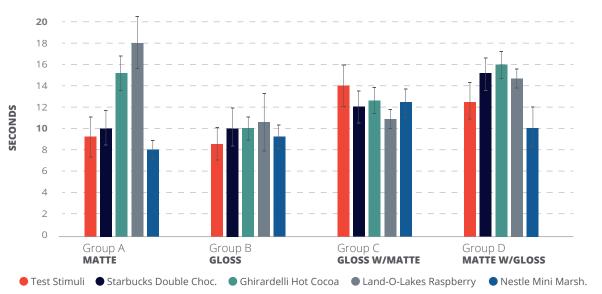




I associate hot chocolate
as a "splurge" purchase so
I would be more willing to
buy something that looks
'nicer'.





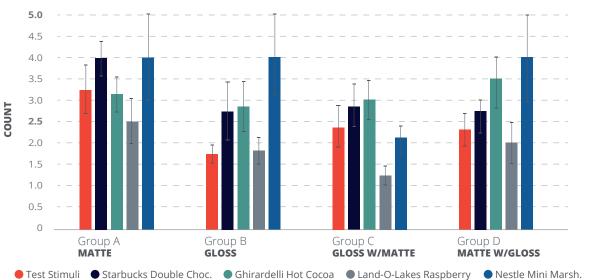


Prototypes A, C, and D all performed better than prototype B, the all gloss version. Within the competitive planogram, prototype C performed the best by placing 7th out of the 17th planogram products. (Figure 1) Prototype B had a statistically significant lower time to first fixation than prototype C but was on par with prototype A. Prototype B placed 2nd out of 17 SKUs in the competitive planogram and prototype A landed in 3rd. (Figure 2)

Prototype A had statistically significant more fixations than prototype B. Prototype B was the only one out of the four to perform at the lower end of the competitive planogram for fixation count. The other three prototypes performed consistently well in the middle of the planogram, but A and C were statistically equal to the top performing SKUs in their group. (Figure 3)

### TOTAL FIXATION COUNT VS. NATIONAL BRANDS

» Figure 3

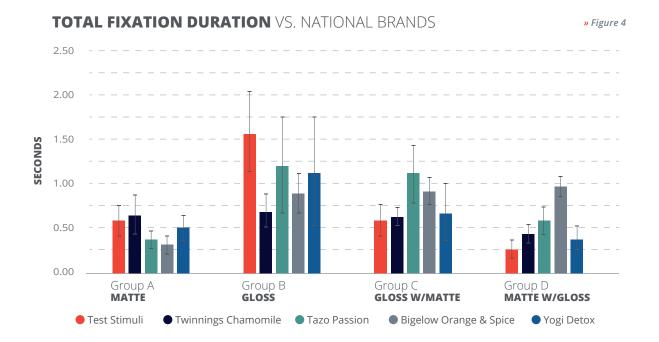


### **TEA - EYE TRACKING METRICS**



It's more important to me that
it is recyclable & made from
environmentally friendly paper, which
often times does not look shiny or as
flashy. After all, I'm just going to take
it out of the box anyway!

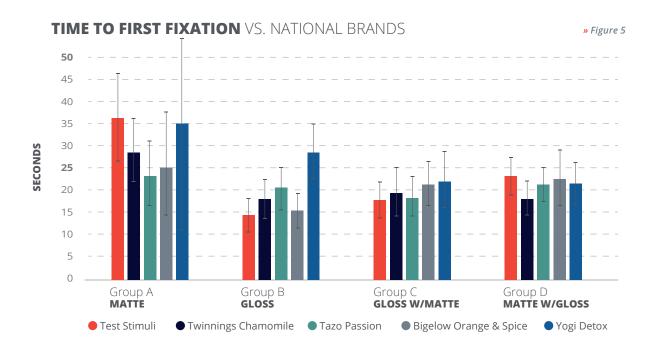




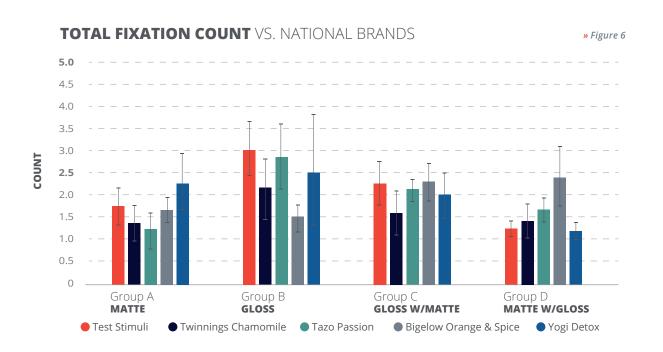
Prototype B had a statistically significant longer fixation duration than all the other groups. Prototype B also performed the best in the competitive planogram, coming in 4th out of the 68 tea SKUs. On the other hand, prototype D performed the least favorable, coming in 66th out of the 68 SKUs. (Figure 4)

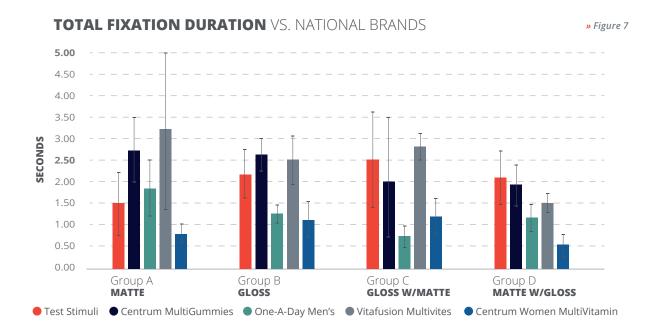
Prototype B was seen significantly quicker than prototypes A or D but was on par with C. However, the prototype in group C performed the best in the competitive planogram, ranking 8th out of the 68 tea SKUs. Prototype A performed the least favorable by ranking 51st out of the 68 SKUs. (Figure 5)

Similar to the time to first fixation findings, prototype B received significantly more fixations than A or D. Performing more favorably, the prototype in group B ranked 8th out of the 68 SKUs in the competitive planogram. Prototype C was not far behind, coming in 11th. (Figure 6)









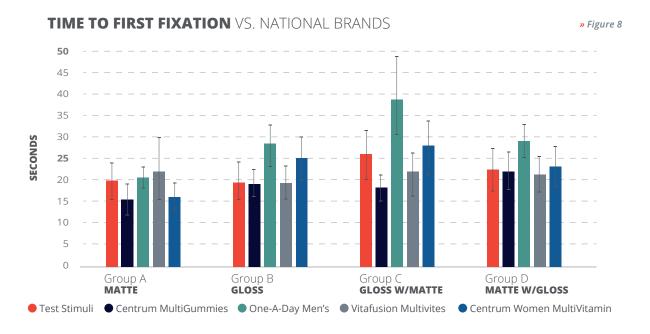
### **MULTIVITAMIN - EYE TRACKING METRICS**

Prototype C had a slightly longer average fixation than the other three test stimuli, but there was no significant difference between any of the groups. All of the prototypes performed in the top half of the competitive planogram, with prototypes from groups D, C, and B coming in 1st, 2nd, and 3rd. (Figure 7)

Prototype B was seen slightly quicker than A, but the differences between all of the groups were so close as to be statistically even across the board. In the competitive planogram, the prototype in group B performed the best by coming in 3rd out of the 17 SKUs. However, the top performers were only slightly better than the bottom performers. (Figure 8)

Prototype C had the highest number of fixations. However, prototypes A, B, and D were so close as to be statistically even across the board. In the competitive planogram, the prototype in group C performed the best, coming in 1st out of the 17 SKUs. The rest of the prototypes performed in the top 50 percent of the planogram. (Figure 9)

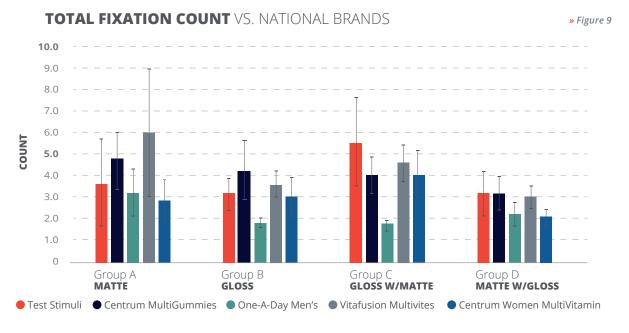






66 I need something to catch my eye because there is a lot of products with the same qualities.









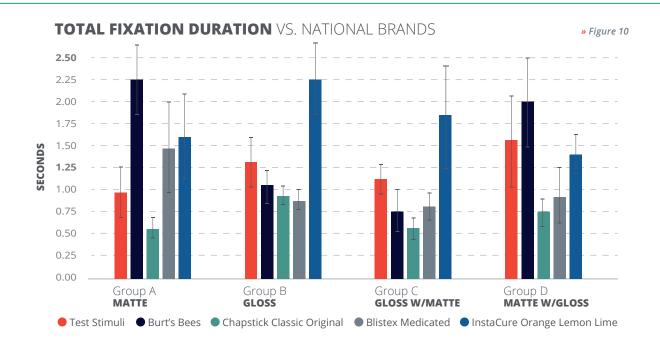
### **LIP BALM - EYE TRACKING METRICS**

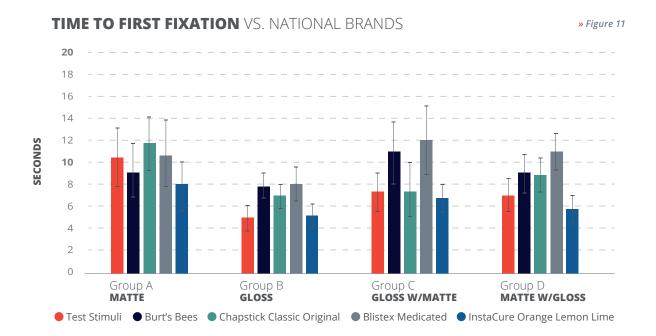
Prototype D had the longest total fixation duration of the test stimuli, but the differences between all of the prototypes were so close as to be statistically even across the board. All of the prototypes came in the top 50 percent of their competitive planogram with prototype D performing the best by coming in 2nd out of the 12 SKUs. (Figure 10)

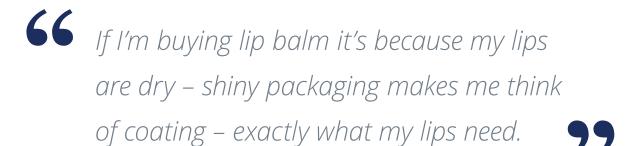
Prototype B was noticed significantly quicker compared to A. Prototype B also performed the best compared to the other prototypes by coming in 2nd in the competitive planogram. Although the prototypes A and B performed in the bottom 50 percent in the competitive planogram, they were only seen slightly slower than the very top performing SKUs.

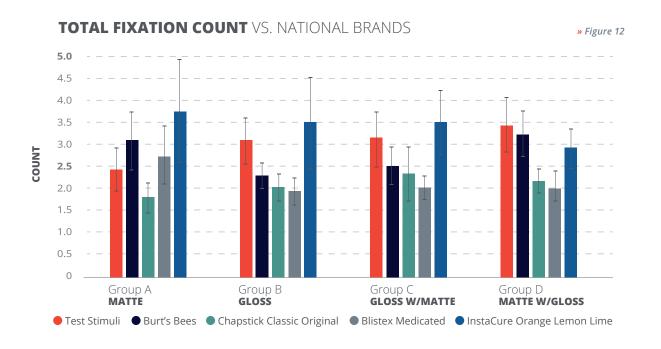
(Figure 11)

Prototype D performed the best for the fixation count metric but was on par with the rest of the prototypes. In the competitive planogram, prototype D ranked the best compared to the other SKUs, but all of the prototypes ranked in the top 50 percent. (Figure 12)









### **MEN'S UNDERWEAR - EYE TRACKING METRICS**

Prototype D had the longest fixation, but the rest of the prototypes were on par with each other. The prototype in group D was the only prototype in all of the groups to perform in the top 50 percent of the competitive planogram. It came in 8th out of the 26 SKUs. (Figure 13)

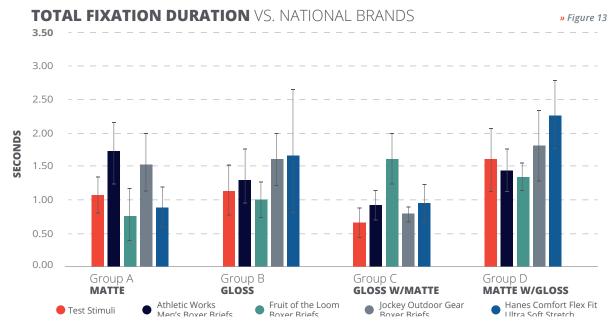
Prototype A was found the quickest by participants but only significantly guicker than D. Prototype A and C performed in the top 50 percent, while B and D placed within the bottom 50 percent. (Figure 14)

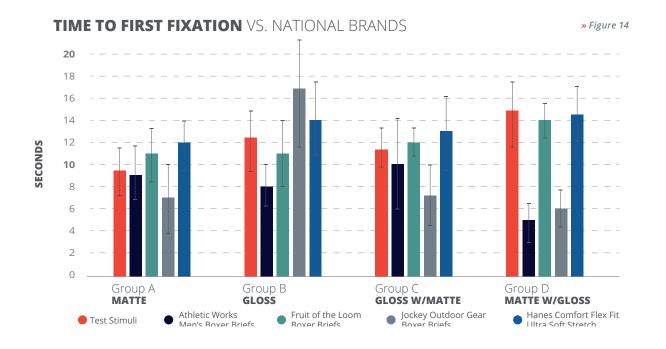
Prototype A had the highest fixation count but was only significantly higher than B and C. Prototype A performed the best in the competitive planogram, but there was no significant difference between the highest performing SKU and the *lowest performing SKU.* (Figure 15)



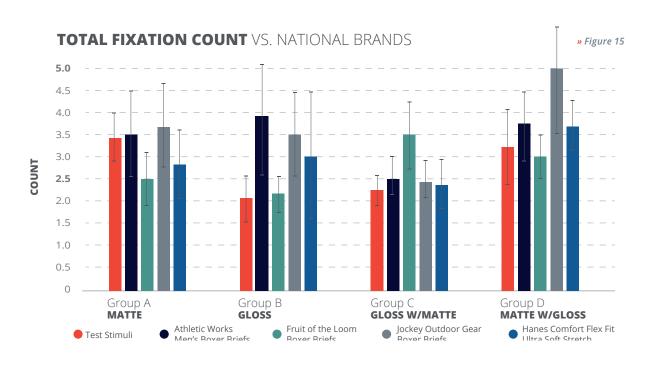
66 Buying more expensive underwear is important to me since it is usually more comfortable and makes someone feel better wearing it, so I would be more interested if the packaging portrayed it as higher quality.











# Consumer Preference

At the end of the shopping, each participant was asked to compare all 4 packages for each product. They were told that each package had the same graphics but were all printed differently. The

participants were asked to physically examine each package and to identify which one was the most attractive to them or if they all look the same.

### **Hot Cocoa** (Figure 16)

 A majority of the participants preferred prototype D, a matte with gloss accents.

### **Tea** (Figure 17)

 A majority of the participants saw no difference between the prototypes. Of those who did, prototype D was preferred matte with gloss accents.

### **Multivitamin** (Figure 20)

 A majority of participants saw no difference between the prototypes, but those who did preferred prototype D- matte with gloss accents.

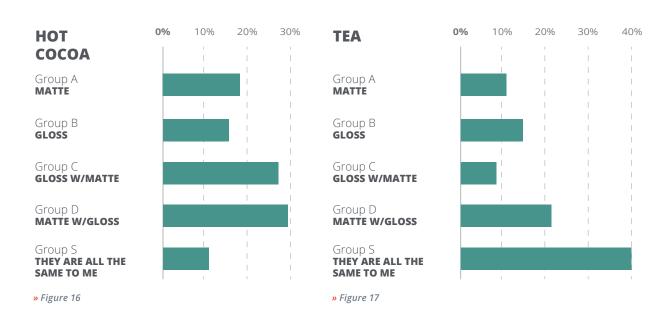
### Lip Balm (Figure 18)

 A majority of participants saw no difference between the prototypes, but those who did preferred prototype B, the all gloss.

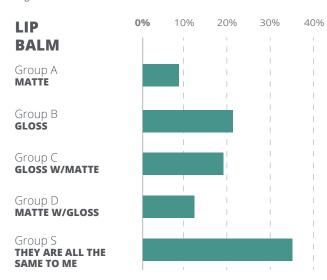
### **Men's Underwear** (Figure 19)

• A majority of participants saw no difference between the prototypes, but hose who did preferred prototype C, the gloss with matte accents.

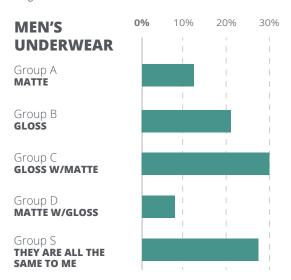
Prompt: There are 4 packages under each box. Each package has the same graphics, but they are printed differently. Some are glossy, some are matte, and some have "embellishments' of gloss or matte accents. I'm going to uncover them one at a time and have you look at them. You can pick them up, look at them under the light; however you'd like to compare them. Please tell me if one of the packages is more attractive to you. And if they all look the same, please tell me they are the same.



» Figure 18

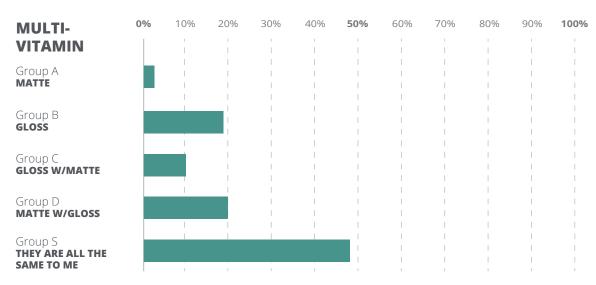


» Figure 19









# Navigation Hierarchy

There's no doubt that certain specialty coatings have the ability to make certain elements on a package stand out. However, the specialty

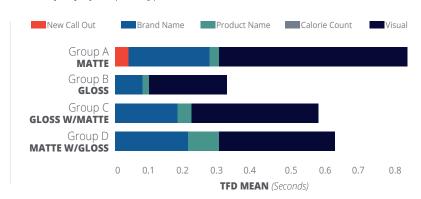
coatings affect the duration of the shopper's ability to notice elements and in what order they notice them.

### **TOTAL FIXATION DURATION - LABEL ELEMENTS**

### **HOT COCOA**

When looking at the label elements of the hot cocoa packaging, consumer attention was held the longest by the cocoa mug visual in every prototype version, especially in the all matte version. Consumer attention was held the second longest by the brand name. Followed by the product name and new call out. There was no measurable attention shown to the calorie count area of any of the prototypes.

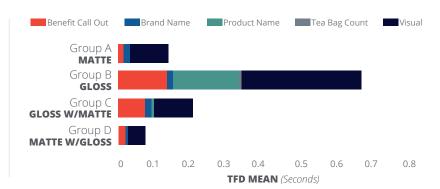




### **TEA**

The visual of the lemon and flower on prototype B held the longest consumer attention compared to the rest of the prototypes. Prototype B also held the longest consumer attention of the brand name and benefit call out. Prototype D's label elements were not significantly noticed. The tea bag count was only noticed on prototype B.

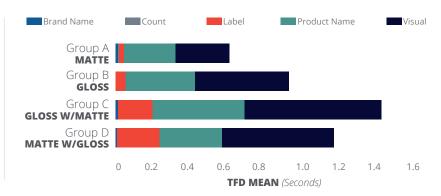




### **MULTIVITAMINS**

For every prototype, consumer attention was held the longest by the fruits and vegetables. Group C – gloss with matte accents – performed the best on the visual and product name elements, but was slightly outperformed on the multivitamin label in group D. The tablet count was only noticed by group A.

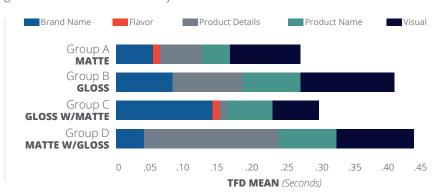




### **LIP BALM**

Consumer attention to label elements varied with every test stimuli. Depending on the prototype, product name, visual and product details all demanded attention. Group B held the longest attention on the visual but tied with group D with the longest attention on the product name. Group C held the longest attention on the brand name but tied with group A that held the longest consumer attention on the flavor label.

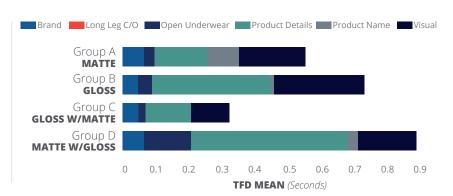




### **MEN'S UNDERWEAR**

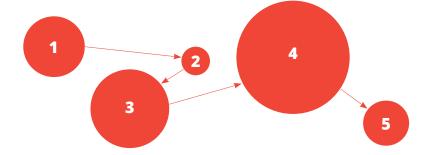
When looking at label elements, the product details "3 Tagless Boxer Briefs" commanded the most attention for groups B,C and D but most significantly in group D. Group D also held the longest attention on the "open underwear" element of the packaging. Group B held the longest attention on the visual, while group A and D tied on the longest attention for the brand name.





### **TOTAL FIXATION DURATION - LABEL ELEMENTS** (CONT'D)

The number represents the order each label element was experienced. The size of the circle represents how long the label was fixated on. The larger the circle, the longer participants were fixated.



### **HOT COCOA**

The cocoa mug and brand name got an overwhelming amount of attention on all prototypes, but their order and intensity varied slightly with each coating treatment. The "new product" callout was only noticed in prototype A, and there was no recorded visual interest for the calorie count.



### **TEA**

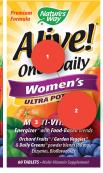
Each label element was noticed in a different order on all of the prototypes. The brand name grabbed the participant's attention first on prototypes B and D. The visual illustration of the lemon held the longest fixation on all of the prototypes, but it was never first to be noticed by participants.

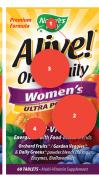


### **MULTIVITAMINS**

The product name and fruits and vegetables visual illustration commanded the highest attention time for all the prototypes. Only on prototype A, did participants show visual attention on 3 out of the 5 areas of interest.









Group A

Group B GLOSS

Group C
GLOSS W/MATTE

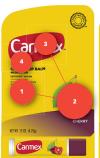
Group D
MATTE W/GLOSS

### **LIP BALM**

The order of fixation for the lip balm package varied even more than the rest. The product name was noticed first on prototypes A and D but noticed last on prototype B. The product details and the cherry illustration held the longest fixation for all the prototypes, except for C.







Group C
GLOSS W/MATTE

Car



Group D
MATTE W/GLOSS

### **MEN'S UNDERWEAR**

The product details and the visual held the longest fixation for the majority of the prototypes, except for prototype A. The product name held the longest fixation for prototype A but wasn't noticed in C.



Group A



Group B **GLOSS** 

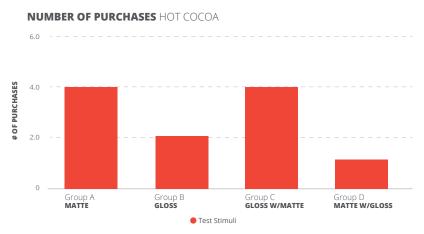


Group C
GLOSS W/MATTE

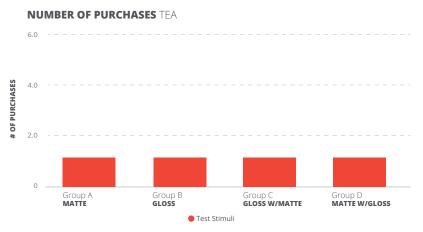


Group D
MATTE W/GLOSS

# Purchasing Decisions



The hot cocoa was the only category tested where a majority of participants – 53 percent – reported that they would be more inclined to purchase a package that featured specialty printing effects. Prototypes A and C were purchased 4 times where as prototype D was only purchased once.



45 percent of participants reported that they would be more inclined to purchase an herbal tea package that featured specialty printing effects. All 4 of the prototypes were purchased once by the participants.



43 percent of participants reported that they would be more inclined to purchase a multivitamin package that featured specialty printing effects. Prototype C was purchased the most with 3 purchases altogether.



# I need something to catch my eye because there is a lot of products with same qualities.



34 percent of participants reported that they would be more inclined to purchase a lip balm package that featured specialty printing effects. This was the second lowest inclination of any of the 5 products tested. Prototype A and D were purchased the most with 3 purchases altogether.



Only 29 percent of participants reported that they would be more inclined to purchase a men's underwear package that featured specialty printing effects. This was the lowest inclination of the 5 products. Prototype D was purchased the most with 2 purchases, while prototype C was not purchased at all.

66

I think the important thing would be the feel of the product and the design/what it is made of. Again, the packaging wouldn't be important.



# How Do the Different Categories Compare?

# Are you more inclined to make a purchase that is in packaging with a specialty printing effect?

When looking through all the data and analyzing it, it's difficult to compare the categories to one another as the data varies from one category to the next. It's important to understand who your consumers are, how the specialty coatings will affect them, and understanding your category.

Understanding who your consumers are and how they experience your product is crucial. A percentage of your consumers might experience your product differently than the rest. In the post-survey, the participants were asked the question, "are you more inclined to purchase hot chocolate that is in packaging with a specialty printing effect?"

One participant responded, "I associate hot cocoa as a splurge purchase, so I would be more willing to buy something that looks nicer." This one participant, who can represent a percentage of hot cocoa consumers, values hot chocolate as a shopping or specialty product, where a consumer takes the time to seek out the product.

Understanding how these specialty coatings affect your consumer is another crucial element when choosing specialty coatings for your packaging. When asked the question, "are you more inclined to purchase tea that is in packaging with a specialty printing effect," a participant answered, "it makes it feel more like a luxury item to me." The same question was asked about lip balm and a participant answered, "if I'm

buying lip balm it's because my lips are dry - shiny packaging makes me think of coating exactly what my lips need."

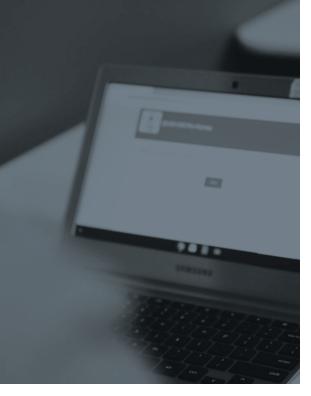
In these cases, the specialty coatings affected how the consumers viewed the products and made a direct connection between the packaging and the product.

Understanding your category and your package design is also vital to making effective

choices for specialty coatings. Knowing how your customers experience your product and how they feel about your product category affords brands and designers with guidelines to use specialty coatings in a way that emphasize the most important information on their package billboard. Iterative eye-tracking tests are a low bar to entry for brands who want to simplify and demystify the package design process.

# ...it makes it feel more like a luxury item to me.

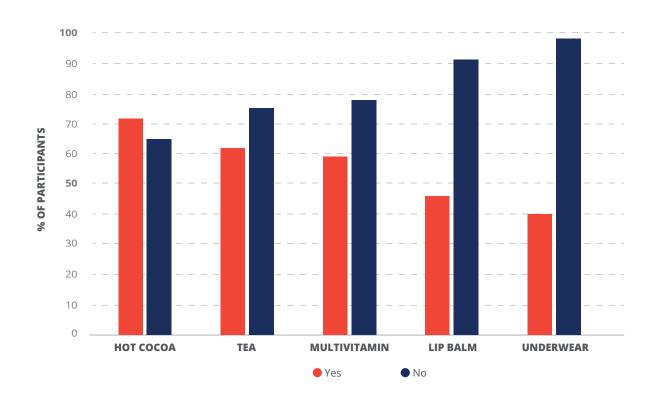


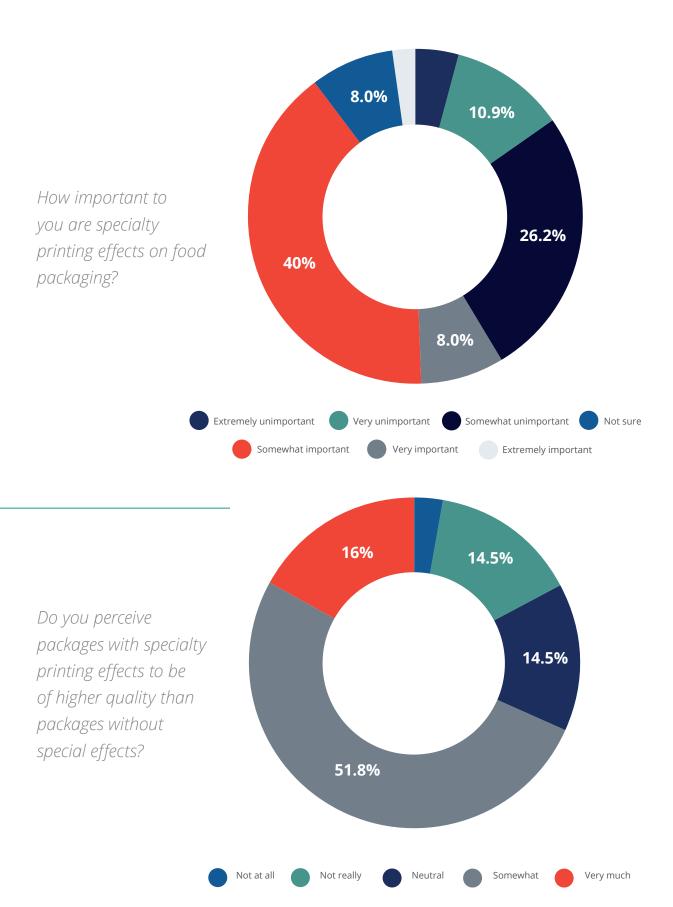


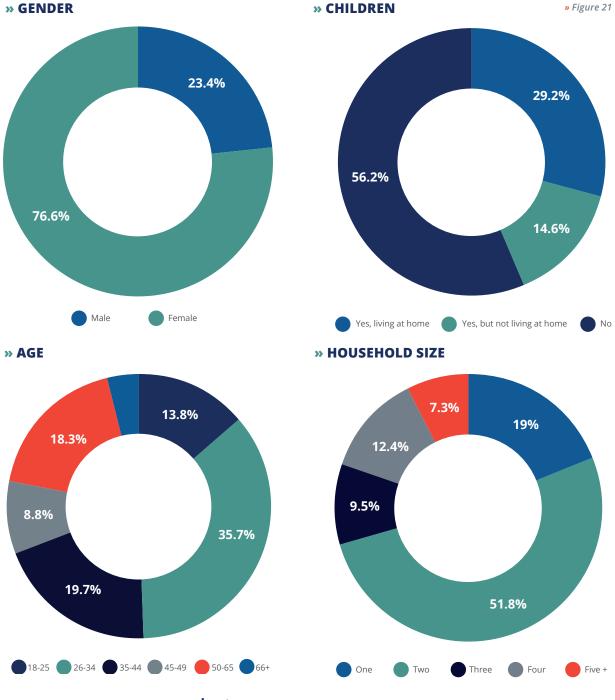


# Survey Results

Are you more inclined to purchase [Hot Cocoa, Tea, Multivitamin, Lip Balm, Men's Underwear] that is in packaging with a specialty printing effect?





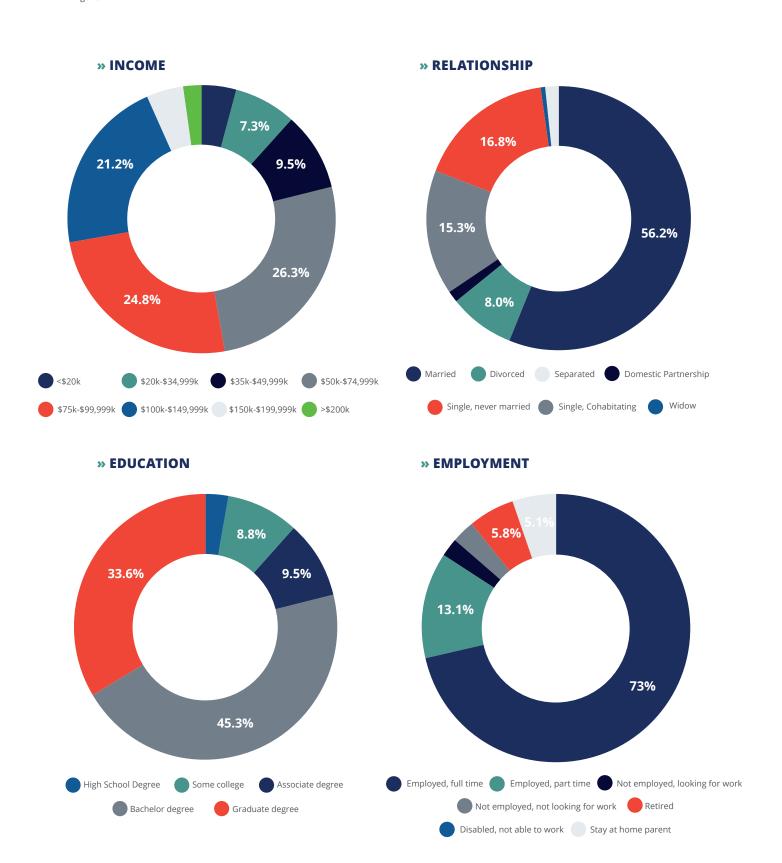


# Demographics

Participants were screened based on age and shopping habits. The profiles meet an accepted shopper profile for this biometric research for primary or shared shopping responsibility for a U.S. household (70/30: female/male and broad income, education, employment, age, and other household influences). (Figure 21, 22)



» Figure 22





# Conclusion

We found that in certain categories there are specific coatings that work very well. For example, the all gloss coating worked very well for the lip balm. The consumers directly correlated the shiny coating with how the lip balm would work on their lips.

For hot cocoa, the participants seemed to like more than one coating. The hot cocoa had the highest percentage of participants who reported that they would be more inclined to purchase a package with specialty coating. Prototypes A and C seemed to draw the most attention, and participants purchased these two prototypes the most. However, prototype D was preferred by most participants when comparing the attractiveness of the packaging. Some participants viewed the purchase of hot cocoa as a splurge item. Naturally, they were attracted to the most expensive looking package.

On the other hand, the multivitamins saw no benefits from the coatings. This is important to note because it illustrates that specialty coatings won't work for every category.

In order to make a decision on whether or not specialty coatings will work for your product, you need understand your consumers, understand how the coatings could affect your consumers, and understand the category your product is in. It's important to test the different coatings on your packaging before releasing it to the public. An assessment tool is provided for your company to assess whether or not specialty coatings could work for your packaging.



# Recommendation

Based on our study results, we recommend...

### 1. Assess your packaging

Take the time and necessary steps into putting in the legwork prior to production. Research your competitors and target audience, analyze your ROI goals, and cross-reference those with a pricing grid. Assess where the cost of specialty coating balances with your ROI. Based on your market research, is a specialty coating necessary? Are your competitors utilizing specialty coatings? If so, would doing the opposite help you stand out in the crowd?

## 2. Specialty coating might not be the answer for everyone, so test it out prior to releasing it

The only effective way to know if specialty coatings will have the desired effect on your target audience is to test it. As you've seen in this study, there are certain markets where people perceive the importance of specialty coatings to be of higher importance than others. Ask yourself: Does this apply to our market?, Is our product an outlier that requires a deeper dive?, Would our product be considered a luxury item or a convenience product?



# Assessment Tool Matrix





VISUAL APPEAL

AFFORDANCE

REGISTRATION

PRICE / ROI

COMPLEXITY

LABEL

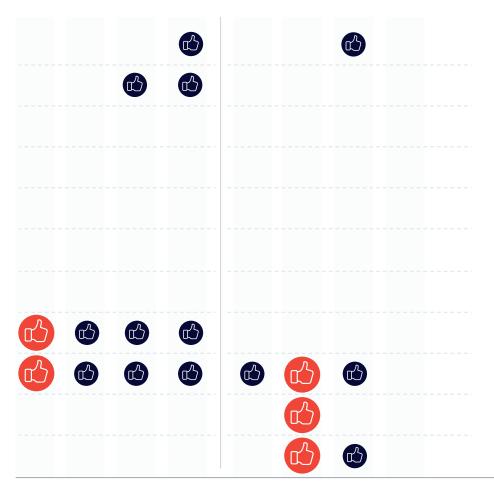
PRODUCT DETAIL

BRAND NAME

VISUAL

PRODUCT NAME

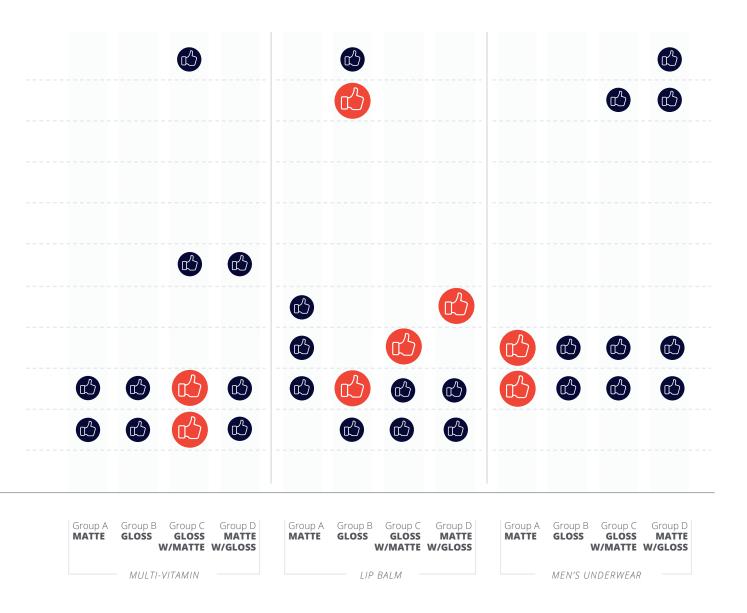
CALL OUT



» Figure 23

Group A Group B Group C Group D MATTE GLOSS GLOSS MATTE W/GLOSS HOTCE W/MATTE W/GLOSS HOTCE W/MATTE W/GLOSS HOTCE W/MATTE W/GLOSS

Don't see your product category and you're interested to see how it performs? Contact Quad for more information regarding our packaging study services.



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