Comparing Emotion Measurements: CATA vs. Visual Stimuli

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Introduction

Emotion research has been widely explored in the food and beverage industry in recent years. As explained in the SOR paradigm, which was first presented in the 70's, environment stimuli (S) leads to an emotional reaction (O), which results in a consumer's behavioral response (R) and is either "avoidance" or "approach" behavior (Mehrabian and Russell, 1974). As product researchers, in addition to traditional measurements, we often like to capture consumer's emotion responses to better predict their behaviors thus in turn to better predict market success. Among several emotion measurements widely used by the food and beverage industry, the check-all-that-apply (CATA) method has proved to be an easy to use method and effective in gaining additional insight into products and the emotional responses they elicit. CATA is a rapid method, which can aid in describing samples without the use of scales and can further contribute to the discrimination of samples. However there are some limitations, such as translation issues when we apply it to multiple global markets.

Expanding on this however, visual stimuli, such as pictures, can be used to evaluate underlying emotional responses to products and concepts. Although interesting, very little has been done to compare self-described emotions towards concepts and/or product(s) using the CATA method and the use of pictures to describe their feelings towards a product . Within this exploration, we hoped to answer: can both methods assist in discriminating samples further, is one method more insightful, does liquid perception match concept, and do CATA responses prove similar to results obtained from photo evaluations.

Methodologies

Study# 1 CATA from Traditional CLTs

- Participants:
  - 177 consumers pre-recruited with specific usage and demographic criteria, such as age and gender participated in the tests.
- Samples:
  - 4 prototypes with different flavor profiles were tested
- Protocol:
  - Screened participants evaluated the prototypes on traditional measurements (Overall Liking, Purchase Interest, JAR and etc) in typical CLT settings. In addition, emotion and perceptual measurements were used to evaluate the prototypes in CATA format.

Study# 2 Visual Exercise

- Participants:
  - 150 consumers pre-recruited with similar criteria as in Study #1.
- Samples:
  - A winning prototype from the CLT and a competitor were tested
- Protocol:
  - As illustrated below, Step 1: Select image, Step 2: Describe image, Step 3: Interpret choice. Analysis was completed using Meta4Insight software by Protobrand®



Results & Discussion

Study 1 Results:

- Prototypes A and C were top performers on key measurements, such as Overall Liking and Purchase Interest.
- Emotion and perceptual measurements were used to choose a winning prototype (A) which delivered intended emotional space based on the concept.

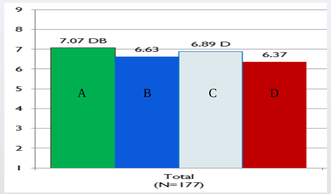


Figure 1:Overall liking scores

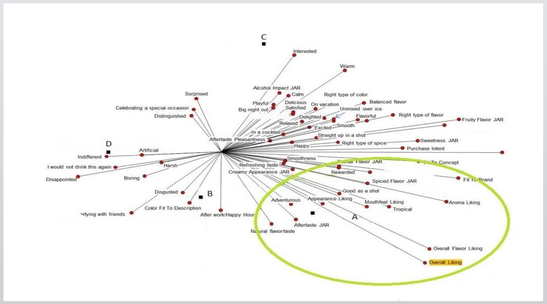


Figure 2: Biplot mapping with emotion and perceptual measurements

Study 2 Results*



Figure 3: Visual and verbal universe of the winning prototype



Figure 4: Visual and verbal universe of the competitor

- Both samples were perceived as "beach" and "tropical"; however there were clear differences as well. The winning prototype was associated more with activities and the competitor was more associated with dessert and winter holidays.

*The Visual and Verbal Universe represent images and words chosen/used to describe the presented samples. Those that are presented largest in their respective universe were selected most frequently. The verbal universe represents the top thirty words used.

Winning Prototype



Competitor

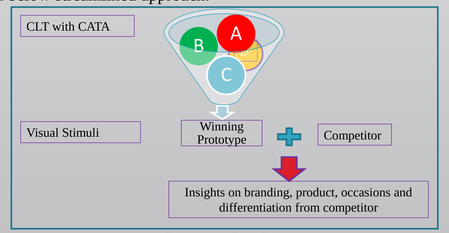


Figure 5: Explanations from participants on their picture choice

Figure 6: Explanations from participants on their picture choice

Conclusion and Recommendation

- CATA results matched visual stimuli exercise. The winning prototype was perceived as "adventurous" and "tropical" in both studies.
- Visual stimuli (Meta4Insights) provided much richer insight, in addition to photo/verbal universes, consumer's own languages provided powerful insights as well.
- Overall our experience with visual stimuli (Meta4Insights) were very positive. The key benefits of using visual stimuli were easy to understand; cross cultural benefits and power of story telling. In the future, a cross cultural study with visual stimuli is planned to investigate whether pictures translate better than words.
- Recommend below streamlined approach:



Acknowledgments

- We would like to thank our colleagues Tom Plonski and Patrick Hughes. Their passion on innovation and trust on SCG group enabled us to apply these new methods.
- We also would like to thank P&K and Protobrand, for their professionalism and idea inspiration.

References

Albert Mehrabian, James A. Russell An Approach to environmental Psychology, MIT Press, Cambridge, MA (1974)