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# Quality is Becoming More About Taste and Less About Cost: Eeg and Survey Study on Consumer Behavior

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## Quality is becoming more about taste and less about cost: EEG and survey study on consumer behavior

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Neuromarketing allows researchers an ability to learn more about the hidden thought-processes of consumers (Lee et al. 2007). The neuromarketing toolset most commonly used are electroencephalogram (EEG), and functional magnetic resonance imaging (fMRI). Brain activity measured in the frontal lobe has been shown to indicate emotions and feelings which are key in the decision-making process (Davidson, 1992). Neurological measurements coupled with surveys and observational data, may help to understand the emotions and judgments consumers experience when making purchase decisions, specifically as it relates to taste.

According to an EEG study conducted by Burshteyn and Buff (2008), individuals indicated higher levels of product liking based on their familiarity with the product. These individuals also seemed unable to distinguish between manufacturer brands and well-known private-label brands. A wine tasting, using functional magnetic resonance imaging (fMRI), was conducted by Plassman et al. (2008) investigating whether individuals would rate the pleasantness of the wine differently when given the price of each. Manipulating the retail price of each wine tasted, researchers found that participants rated wines with a higher price as having a more pleasant taste than the cheaper wine.

Based on these studies, it appears that consumers are influenced by familiarity and price when making a purchase decision. The present study will delve deeper into this phenomenon by investigating consumers' willingness to switch from a preferred manufacturer label brand to an unfamiliar private-label brand if taste is perceived to be identical. The current study will seek to understand this with the following hypothesis:

**Hypothesis 1:** Individuals will have a strong preference of like (left frontal lobe activation) or dislike (right

frontal lobe activation) for a particular brand based on their implicit positive or negative emotional connection to the brand being consumed.

**Hypothesis 2:** Consumers are willing to consider switching to the private label brand if taste is perceived as identical.

**Hypothesis 3:** Experienced pleasantness and price will drive individuals' willingness to switch if the stimulus generalization of tasting the beverage is held constant.

*“Based on these studies, it appears that consumers are influenced by familiarity and price when making a purchase decision”*

### Method

The participants in this study were volunteers between the ages of 21 and 50, from a population of students, faculty, and staff at Kennesaw State University. When asked to estimate “how financially well-off your household is,” 75% participants provided a response. Approximately, 78% of respondents reported being as “well-off” as most families. Of the remaining participants, 11% reported being somewhat less “well-off” than most families and another 11% reported being somewhat “better off” than most families. Using a well-known manufacturer brand and a less familiar private-label brand; loyalty, taste preference, brand recognition, and price perception were measured. First, participants completed the brand loyalty survey, which consisted of three nine-point Likert scale questions (Raju et al., 2009). Next, participants were

seated and fitted with a standard eight-channel electrode cap for recording EEGs using a bioamplifier system connected to a personal computer ([www.cortechsolutions.com](http://www.cortechsolutions.com)). Selected randomly, the manufacturer brand drink and the private-label brand drink were tasted, each over a period of two minutes while recording EEGs. After tasting each beverage, participants rated the pleasantness of each. Pleasantness was assessed using Plassmann et al.'s (2008) six-point Likert scale (1 = do not like it at all/not intense at all; 6 = like it very much/very intense).

Before presenting participants with the prices of the two brands, a third survey gauging their level of frugality was administered (Lastovicka, et al., 1999). After collecting the responses to the survey, the prices of the two brands were presented and participants were asked which product they would consider purchasing based on the price and the pleasantness of the beverage.

## Results

Frontal lobe activation was measured in channels F<sub>3</sub>, F<sub>Z</sub> and F<sub>4</sub> of the EEG machine, which are most commonly used to observe emotion (Davidson, 1992). Channel F<sub>3</sub>,  $t(22) = -.379$ ,  $p = .708$  was compared to channel F<sub>4</sub>,  $t(22) = 1.385$ ,  $p = .180$  to determine EEG asymmetry. The differences between the two channels reveal no significant differences  $t(22) = -1.473$ ,  $p = .155$ . Though both drinks exhibited overall responses within the beta frequency range indicating arousal, the lack of differentiation between the drinks did not support Hypothesis 1. Participants' rating for the degree of brand loyalty was average ( $M = 5.00$ ,  $SD = 2.04$ ), suggesting that participants are neutral to the manufacturer brand mentioned in the survey. There was no significant effect from the order of presentation,  $F(1,10) = 0.189$ ,  $p = .67$ , nor is there an interaction between order and brand,  $Wilk's \lambda = 0.99$ ,  $F(1, 10) = .122$ ,  $p = .73$ . So, participants seemed to prefer the manufacturer brand ( $M = 4.42$ ,  $SD = 1.31$ ) to the private-label ( $M = 3.58$ ,  $SD = 1.68$ ), regardless of which they tried first.

When price is not an issue, the majority (83%) preferred the manufacturer brand because they were only shown a picture without the price. However, when they were shown a picture where the private-label brand was significantly cheaper, only half (50%) preferred the manufacturer brand. Support for hypothesis 2 and 3 were identified when 100% of the participants who initially choose the manufacturer brand switched to the private label brand after price was introduced.

## Discussion

The neutral emotional response was consistent with past research indicating that participants could not distinguish the brands presented in the study (Burshteyn & Buff, 2008). The amount of participants who chose

the manufacturer brand when shown brand only reveal consistent findings of past research indicating that participants will rate the quality of a beverage based on the price and familiarity with the brand (Plassman et al., 2008). However, after tasting each beverage and rating the quality our results reveal more individuals were willing to switch to the less expensive brand because the taste was similar. Our results provide actionable information for marketers. Understanding that participants may be willing to switch from a manufacturer to a private-label brand if both brands are similar in flavor may provide private-label brand managers with additional ammunition in their advertising campaigns. This is especially important in the current economy when consumers are eager for cost-saving options without sacrificing certain pleasures.

## “Participants may be willing to switch from a manufacturer to a private-label brand if both brands are similar in flavor”

As with most studies, generalizability is questionable due to a small sample size and the university setting. Another limitation of the present study may be that some individuals have a preference for a particular product not included and the neutral responses could have been due to individual preferences. Future research should expand the number of participants and include more than one stimulus for measurement.

## References

- Burshteyn, D., & Buff, C. L. (2008). Private-label brands, manufacturer brands, and the quest for stimulus generalization: An EEG analysis of frontal cortex response. *Review of Business Research*, 8(6): 92-96.
- Davidson, R.J. (1992). Anterior cerebral asymmetry and the nature of emotion. *Brain and Cognition*, 6: 125-151.
- Lastovicka, J. L., Bettencourt, L. A., Shaw Hughner, R., & Kuntze, R. J. (1999). Lifestyle of the tight and frugal: Theory and measurement. *Journal of Consumer Research*, 26(1): 85-98.
- Lee, N., A. J. Broderick, et al. (2007). "What is 'neuromarketing'?" A discussion and agenda for future research." *International Journal of Psychophysiology*, 63(2): 199-204.
- Plassmann, H., O'Doherty, J., Shiv, B., & Rangel, A. (2008). Marketing actions can modulate neural representations of experienced pleasantness. *Proceedings of the National Academy of Sciences*, 105(3): 1050.
- Raju, S., Unnava, H. R., & Montgomery, N. V. (2009). The effect of brand commitment on the evaluation of nonpreferred brands: A disconfirmation process. *Journal of Consumer Research*, 35(5): 851-863.