

Potential for Attitudinal Bias in Liking Scales

Mauricio Castro, Michele Foley, Pam Hartwig
Nestlé Nutrition R&D, Fremont, MI USA
email: Pamela.Hartwig@rd.nestle.com

Background

For many product researchers, acceptability scales are the yardstick to gauge product success. Two common acceptability scales are the 9-pt hedonic scale/OOL (1=dislike extremely, 9=like extremely) and the 7-pt quality scale/OOQ (1=extremely poor, 7=excellent). For decades, researchers have been studying these types of scales, assessing their sensitivity, validity and reliability. This research was undertaken to explore the potential attitudinal bias related to parents rating liking of food for their children. The researchers hypothesized that the two common acceptability scales may differ in their bias, potentially influenced by parents' own personal liking, perceived healthiness and perceived uniqueness of the food being evaluated.

Objective

Understand what attitudes or criteria might be employed to assign acceptability ratings for the two scales of interest, targeting three possible sources of bias: personal liking, healthiness and uniqueness.

Methodology

An online survey was conducted in March 2018 with parents of small children. One hundred and forty-nine parents completed the survey, focusing on their liking and feelings about 5 vegetables for their children. Three potential sources of bias were investigated: personal liking (1=hate, 5=love), healthiness (1=not healthy at all, 5=extremely healthy), and uniqueness (1=not unique at all, 5=extremely unique).

Data Analysis

Correlation analysis was used to determine the association between the liking variables and the perceptual variables.

Multiple linear regression analysis was used to build predictive models. The size of the coefficients was used to measure the impact on liking (Figure 1).

Note: One vegetable (outlier) and one variable (uniqueness; low variability) were removed from the regression analysis.

Figure 1: Regression_Models

$$Y(OOL) = \beta_0 + \beta_1 \text{ Liking} + \beta_2 \text{ Healthiness}$$

$$Y(OOQ) = \beta_0 + \beta_1 \text{ Liking} + \beta_2 \text{ Healthiness}$$

Figure 2: Range of Values – Vegetables

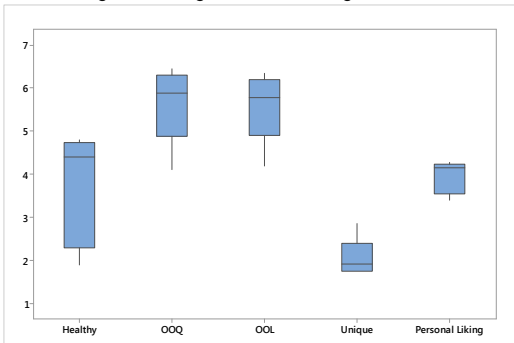


Figure 2 displays the range of mean scores in order from most variable to least variable (all scales normalized to 7 points).

Results

The products differed on average, more in healthiness than personal liking ratings.

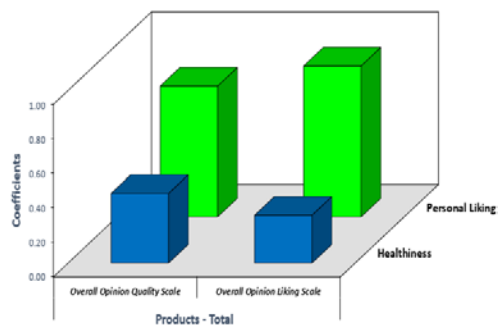
Correlations confirm that OOQ is more associated with healthiness ($r=0.67$) and OOL is more associated with personal liking ($r=0.66$). See Table 1.

Personal liking has more impact than healthiness and impacts the ratings of both scales about the same. Perceived healthiness influences the 7-point quality scale more than 9-point hedonic scale (Figure 3).

Table 1: Pearson Correlation Coefficients

Correlations	OOQ	OOL	Liking
OOL	0.88		
Liking	0.26	0.66	
Healthy	0.67	0.25	-0.55

Figure 3: Regression Models Coefficients



Conclusions

- Personal liking influences the ratings more than healthiness for both scales.
- Perceived healthiness is more associated with 7-point quality scale than 9-point hedonic.
- 7-point quality scale may be a more effective scale than the 9-point hedonic to reduce personal liking bias when parents evaluate a food product for their child.