Emojis vs. Liking scores: Which offers a better insight into hedonic dynamics?

Arnaud Thomas, Justine Parise, Lauriane Demonteil, Caroline Peltier, Eric Teillet, Michel Visalli

SensoStat

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#method #consumer #fullportion

A. Thomas[1], J. Parise[1], L. Demonteil[1], C. Peltier[2], E. Teillet[1], M. Visalli[2]
[1]SensoStat, France, [2]CSGA, l'Institut Agro Dijon, CNRS, INRAE, Université Bourgogne. INRAE, PROBE research infrastructure, ChemoSens facility, F-21000 Dijon, France

Contact: arnaud.thomas@sensostat.fr

Context

In hedonic tests, products are usually evaluated by consumers after a single intake, which is **not representative of a real consumption.** Thus, some tools have been developed to measure the dynamics of preferences over multiple intakes, with mitigated results.

As an alternative, indirect measures of preferences based on emotions have emerged, and recent researches highlight the **potential of emojis** for gaining insights about consumers tasting experiences.

Objective

The present study proposes to compare the **hedonic dynamics** for three cereal bars evaluated using two protocols in natural settings (at home): **a hedonic test and a CATA task using emojis** as attributes.

Procedure

Two panels of consumers were recruited and balanced in age, gender and frequency of consumption:

- The first panel (n=102) performed a hedonic test.
- The second panel (n=101) carried a CATA task using emojis.

Illustrations of the evaluated products

Three cereal bars (Carrefour Classic brand) were tasted by the consumers:

- Apple, peanut and chocolate / coconut.
- Each bar weighed 21g and was packaged in individual plastic packaging anonymized with a 3-digit code.

Instructions:

qualtrics XM

- In each group, consumers tested one sample (full portion) per day at home.
- Each sample was evaluated at three predetermined moments: after the first bite, after having consumed half the full portion, after the last bite.
- The first panel rated liking on a 9-point discrete scale.
- The second panel had to select the applicable emoji(s) from a list of 14 emojis (based on previous studies).

Illustrations of the 14 emojis used in the CATA task

Results

- Emoji dataset was analyzed thanks to the mrChi² framework (Mahieu et al., 2021) in order to discriminate between products. The results are illustrated by the emoji clouds below.
- Then, a similar procedure was performed within product in order to discriminate between the three tasting times. Results were compared to liking dynamics (ANOVA model: liking = product*time + product + time + subject).

Emojis characterization

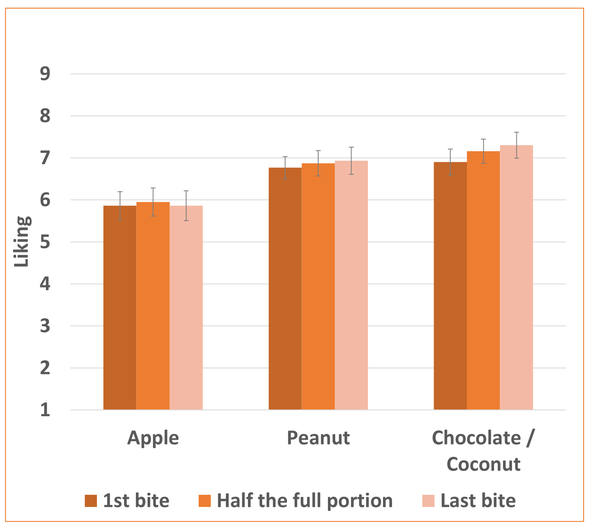
The size of an emoji is proportional to its citation rate. Format is defined according to the test of associations between each product and each emoji (mrChi²).
In grey: product not significantly (α = 5%) different from the others for this emoji.
In transparent: emoji significantly less cited (α = 5%) for this product compared to the others.
Standard emoji: emoji significantly more cited (α = 5%) for this product compared to the others.

Differences in citation rates of emojis between intakes

Emojis	Apple	Peanut	Chocolate / Coconut
😕	ns	ns	ns
😊	ns	+	+
😌	ns	ns	ns
😆	ns	ns	ns
😔	ns	ns	ns
😮	ns	ns	ns
😍	ns	ns	ns
🤢	ns	ns	ns
😢	ns	ns	ns
😋	ns	ns	ns
🤔	-	-	ns
🤭	ns	+	ns
😐	ns	ns	ns
😠	ns	ns	ns

Summary of tests of associations (by product) between each time and each emoji (mrChi², α = 5%).
+: significant increase in citation rate
-: significant decrease in citation rate

Differences in liking between intakes



Each average is shown with its CI (95%)
Product by time interaction: p-value = 0.683
Time effect: p-value = 0.196
Product effect: p-value < 0.0001

- The results obtained from the two methods were consistent with regards to the discrimination between the products, with the apple-flavored cereal bar being less preferred compared to the peanut and chocolate-coconut bars.
- The liking did not change over the three measures, while the perception of the emoji did, this latter providing some product-specific dynamics. For example, the percentage of citation of positively valenced emoji (😊) increased for two products (peanut and chocolate / coconut), suggesting a reinforcement of acceptability during consumption.
- Conversely, for the apple-flavored product the percentage of citation of neutral valenced emoji (🤔) was maximal after the first bite but decreased after.

Mahieu, B. et al. (2021). A multiple-response chi-square framework for the analysis of Free-Comment and Check-All-That-Apply data. Food Quality and Preference, 93.

Conclusions & Perspectives

- This study shows that using emoji could be appropriate to capture the dynamic aspect of the perception, offering **a more holistic and multidimensional representation of the hedonic and emotional characteristics of food products.**
- Therefore, this tool has the potential to benefit industries aiming to **create products with distinct emotional patterns over time.** Moreover, depending on the consumer target, using this approach could be relevant for specific groups like children or in situations involving cross-cultural considerations.