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Attitude measurement with emoji, a large scale study on French youngsters

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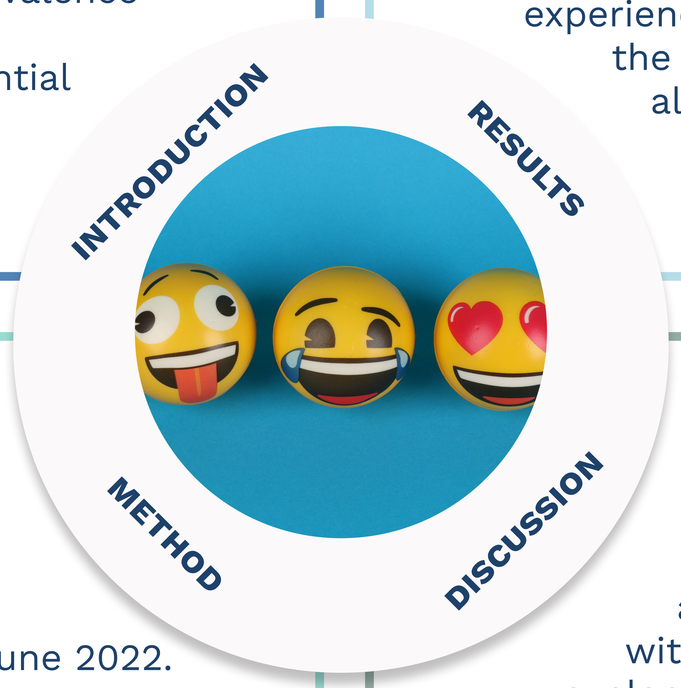
Participants' behavior during in-lab, online or ecological experiments is a common concern of researchers. Many strategies have been experimented in order either to maximize participants' focus or take unreliable response behaviors into account during results analyses. Instructional manipulation check (Oppenheimer, Meyvis & Davidenko, 2009) is the most commonly used method, combining active participants-focusing strategies (*i.e.*, focus dedicated screens) with passive strategies of unreliable responses detection (*i.e.*, trap questions). Pattern detection analysis has also been used to extract unreliable responses from a Likert scale study dataset (Leiner 2019). Although, little attention has been paid to the intrinsic boredom-inducing characteristics of such surveys, also characterized by weak response rates (Mircioiu & Atkinson, 2017).

In marketing research, the poor response rate associated with Likert scales has successfully been addressed with pictograms (*e.g.*, five-stars, Chen, 2017), which valency, however, implies limiting its usage to satisfaction-related metrics. Known as emoji, a large palette of pictograms is used nowadays in 95% of global digital communications (Alismail & Zhang, 2020), offering researchers the possibility to increase the response rate, response quality, and valence variety in Likert-type studies.

This study aimed to investigate the potential of common emojis used instead of traditional Likert-type radio buttons.



Participants

The study took place in schoolchildren classes dedicated to competency and profession discovery. 15150 participations were collected from September 2021 to June 2022.

Methods

3 scales of 5 questions regarding the use of the tool tested by users were displayed on the screen. Users were never asked to answer, being only invited to click on the question section by a single push notification.

For each question, participants were asked to choose an emoji among 5 negative, 1 neutral and 5 positive emotion alternatives.

Once the emoji chosen, participants were invited to choose the intensity of the selected valence with 6 alternatives presented with incremental emoji size. During this phase, participants were free to choose another valence.

Descriptive statistics

33% of participants opened the question block (*i.e.*, 5000 responses). Of these participants, 5% closed the question block without answering the questions. Emojis' average intensity scores were all included in a 2.77 - 4.68 range (see table).

Fiability analysis

Emoji											
Coefficient	-6	-5	-4	-3	-2	1	2	3	4	5	6
Overall average intensity (SD)	4.38 (1.40)	4.01 (1.22)	2.77 (1.37)	3.97 (1.37)	2.77 (1.37)	3.17 (1.34)	3.11 (1.28)	3.60 (1.07)	3.84 (1.18)	4.35 (0.90)	4.68 (0.82)

To use emoji responses as Likert-type responses, we computed a composite score multiplying emoji rank (see table) with intensity response. Exploratory factor analysis showed poor explained variance by item grouping (all explained variances < 20%, all α < .50).

Correlations

The valence x intensity composite score was used to study the correlation between tool usage and individual DVs. Significant correlations were found between usage intensity (*i.e.*, number of personal and professional experiences reported in the app, time spent using the app) and valence x intensity (all r > .30, all ps < .001).

Exploratory analyses were conducted to assess the added value of the intensity step. Every significant correlation observed with the composite score appeared to be equivalently significant with an isolated valence score. Other exploratory analyses showed that the intensity score was predicted by valence (β = 0.04, p < .001, 2 = .006). We also found that intensity was correlated to numerous DVs all rs > .15, all ps < .01.

Our results suggest that although emoji can be reliable to compute correlation and regression analysis in Likert-scales studies settings, they tend to impede scale validation and preliminary analyses.

In our exploratory analysis, we questioned the utility of intensity assessment, considering that this information could be intrinsically communicated with the choice of emoji. Although emojis' emotional intensity component significantly predicts the intensity of participants' responses, effect size suggested that the intensity component is only partially dependent on emoji choices, especially considering our sample size.

To conclude, if emojis seem to have great potential to enhance participants' focus and response quality, their intrinsic methodological added value needs to be carefully assessed in experimental settings, in comparison to Likert-type scales. Construct validation seems to be the best type of study for this purpose.

References :

- Alismail, S., & Zhang, H. (2020). Exploring and understanding participants' perceptions of facial emoji Likert scales in online surveys: A qualitative study. *ACM Transactions on Social Computing, 3*(2), 1-12.
- Chen, C. W. (2017). Five-star or thumbs-up? The influence of rating system types on users' perceptions of information quality, cognitive effort, enjoyment and continuance intention. *Internet Research, 27*(3), 478-494.
- Leiner, D. J. (2019, December). Too fast, too straight, too weird: Non-reactive indicators for meaningless data in internet surveys. In *Survey Research Methods* (Vol. 13, No. 3, pp. 229-248).
- Mircioiu, C., & Atkinson, J. (2017). A comparison of parametric and non-parametric methods applied to a Likert scale. *Pharmacy, 5*(2), 26.
- Oppenheimer, D. M., Meyvis, T., & Davidenko, N. (2009). Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of experimental social psychology, 45*(4), 867-872.

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