Applied Sensory and Consumer Science
Comparison of two different sensory profiles:
Descriptive sensory profiling of trained panel vs. semi-trained in-home panel

Alina Kleiner, Lena Eberle

Life Science | Food Nutrition and Hygiene

1 Introduction

A trained sensory panel is not always available and is additionally quite expensive. Nevertheless, a descriptive analysis is of great importance. Especially under the circumstances caused by the Covid-pandemic it is essential to check, if valid results can be achieved by semi-trained panelists in in-home testing. Independent of the current situation due to the pandemic, these studies can bring further advantages such as the application in an in-home environment, usage of digital degustations linked to flexibility and lower costs.

Two different sensory profiles will be compared. One has already been created by an internal panel (n=14) in the sensory lab with specified frameworks at university (EN ISO 8589:2010+A1 2014) versus the profile of an in-home panel (n=7) that has to be developed.

H0: There is no significant difference regarding the results of a descriptive analysis performed by a trained sensory panel and a semi-trained in-home panel.

H1: There is a significant difference regarding the results of a descriptive analysis performed by a trained sensory panel and a semi-trained in-home panel.

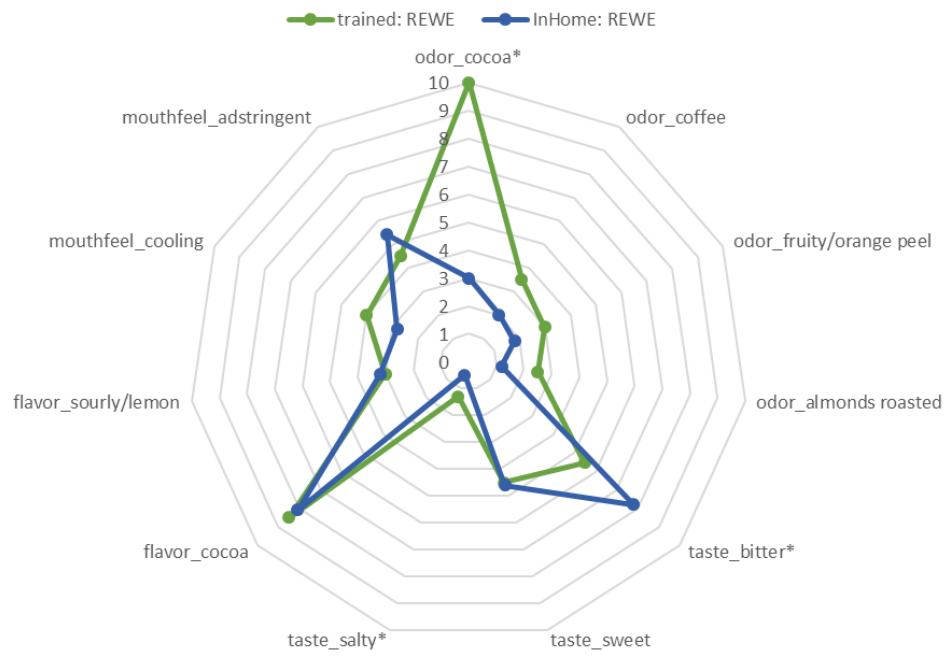
2 Materials and Methods

Products used:
- Schwarze Herrenschokolade edelbitter pour messieurs
- REWE Feine Schweizer Fairtrade Schokolade Edelbitter

For the comparison, an in-home panel needs to be established. Therefore, seven untrained people need to be introduced to the sensory evaluation of food. As a first step creating the descriptive profile, the describing analysis (DIN EN ISO 10035) is carried out, where the assessors need to find attributes to describe the product. Further descriptors are researched using the “Fachvokabular Sensorik” from DLG. The achieved descriptors are clustered and the CATA method (DLG) with two repetitions is applied. The panelists are trained on the final attributes with appropriate references, in order that the same understanding of all assessors is assured. After a first evaluation of the CATA using the Cochrane´s t-Test, a chosen number of the most relevant attributes is used for a descriptive profiling (DIN EN ISO 13299). The panelists are trained for the attributes and the intensities of the references in order to achieve more precise results. Then, each assessor rates the intensities of all attributes for the two chocolates on a continuous line scale with end-anchor lines (10 cm).

The achieved results are evaluated by calculating the mean value and by means of a t-test for every attribute. To compare the different profiles the attributes used by both panels are calculated with a one-way Anova and at 5% level of significance.

3 Result 1: REWE chocolate



4 Result 2: Schwarze Herren chocolate

** significant difference at 5% significance level*

The evaluation of the attributes with * shows a significant difference. An overall tendency towards H0 can be observed.

5 Conclusion and Discussion

The most important finding of this experiment is that the use of an in-home panel is a method of high potential.
Acquiring a complete descriptive profile with a semi-trained in-home panel without any previous experience is challenging. All methods and the basics of food sensory need to be explained in detail. The leading and training of the in-home panel is also time- and work-intense. It can be observed, that the untrained assessors tend to a hedonic evaluation, what could affect the validity of the results. Besides the challenge, the work with the in-home panel using the CATA-method as a help provides good valid results for the sensory descriptive profiling of the two chocolates. There are less significant differences between the attributes of the two panels, so the comparability is given. The same significant differences between the two chocolates in each panel show that the attributes are understood and rated correctly. The existing differences could be due to the different number of panelists. Another reason may be the different references which lead to another scaling of the intensities.
In conclusion the profile of a semi-trained in-home panel is comparable to a trained panel performing in a sensory lab. Especially for smaller companies this method is of high potential, because very often they do not have a trained panel at all. In future, professional panels could be partly replaced by in-home panels due to effective in-home methods and their advantages, for example flexibility. Semi-trained panels could be used for certain product types, simply product formats like chocolate, as more complex products may still need a trained panel. To ensure the applicability of the new method for other products and panels, further evaluations with different products and in-home panels are recommended. Having more online options is key since this is the future – even after the Covid-pandemic.

references

Lawless, Heymann (2010): Sensory Evaluation of Food. Principles and Practices, Springer Verlag, NY

DLG (2020): Die sensorische Schnellmethode CATA

DIN EN ISO 13299 (2016): Allgemeiner Leitfaden zur Erstellung eines sensorischen Profils

DIN EN ISO 10035 (1994-12-00): Beschreibung und Auswahl von Deskriptoren zur Erstellung eines sensorischen Profils

DLG e.V. (2015): Fachvokabular Sensorik. Praxisleitfaden zur Beschreibung von Lebensmitteln mit allen Sinnen

University Albstadt-Sigmaringen
Campus Sigmaringen
Anton-Günther-Str. 51 |72488 Sigmaringen
www.hs-albsig.de

Department
Faculty Life Sciences
Food, Nutrition, and Hygiene

Web/Contact
https://www.hs-albsig.de/hochschule/fakultaeten/life-sciences

Contact Person
Dipl. oec. troph. Andrea Knörle-Schiegg
knoerleschiegg@hs-albsig.de
Prof. Dr. Andrea Maier-Nöth
maiernoeth@hs-albsig.de