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# Editorial: Advances in sensory evaluation of foods

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## Editorial on the Research Topic

### Advances in sensory evaluation of foods

## Introduction

Sensory evaluation is an evolving field that requires integrating new techniques and applications from various science disciplines. The study of how humans perceive foods and beverages is undergoing a technological transformation that provides researchers with unprecedented amounts of data. The development of novel and rapid sensory methods exemplifies this evolution. The integration of biometric responses in food perception, the application of artificial intelligence (AI) to couple sensory data with product descriptors, and the surge of contextual studies using virtual and augmented reality technologies are a few examples of this transformation. Furthermore, significant progress is being made in understanding consumers' psychological reactions to foods and beverages, focusing on studying emotions to analyze food consumption.

Despite these advancements, many researchers in the food science field consider sensory evaluation a discipline that should adhere to traditional and strict methodologies. As a result, there is some reluctance to embrace these evolving techniques, even in the current AI-driven era. This hesitation primarily stems from a conventional mindset and the fear that advanced technologies may replace humans. However, this is a misconception since the development of new and advanced techniques in sensory evaluation aims to enhance efficiency, reduce time and costs, and complement traditional methods, thereby providing richer insights into consumer preferences, product descriptors, and acceptance.

This Research Topic aimed to expand the current knowledge of novel sensory evaluation methods by integrating novel techniques that can be used to increase understanding of food perceptions and consumers' reactions. While some papers published in this Research Topic directly addressed this aim by exploring new technologies and applications, others highlighted the need for methodological rigor and contextual awareness in various aspects of sensory research. [Kumar and Chambers](#) studied the unreliability of clustering techniques in sensory data. They highlighted the potential for significant error when using a single clustering approach, suggesting combining various clustering methods is the best strategy. [Addo-Preko](#)

et al. studied the cultural effects on the hedonic scale length when evaluating consumer acceptance. They concluded that even though the acceptance scores were not affected by the scale and the participants could adjust their scores according to the number of categories, the cultural factors should be considered for the correct choice of scale. In the context of cultural effect, Sharma presented a review of the exploration of the language of smell, highlighting the limitations of universal methodologies and emphasizing the need for culturally sensitive approaches. The study from Ramsaran et al. on sweet potato-based buttermilk biscuits, which used a traditional 9-point hedonic scale, also emphasized the influence of familiarity and cultural preferences on consumer acceptance.

Similarly, Hippolite et al. emphasized the importance of consumer expectations and familiarity with food acceptability, especially with novel products such as 3D-printed mashed potatoes made with upcycled legume water. These findings highlight the need to refine sensory evaluation methodologies and enhance data analysis techniques. Additionally, factors such as demographic influences, scaling approaches, and physiological and psychological biases require further investigation to understand the holistic sensory experience of foods fully.

## Conclusion

Even though advances in sensory evaluation using novel digital and AI-driven technologies seem promising and of utmost importance within the food science field, the transformation and adoption of these techniques among the most traditional researchers in sensory science remains gradual. The papers published in this Research Topic reflect this by focusing on statistical methods, the use of conventional scales and the effects of familiarity and cultural factors rather than the development and application of new approaches. While there is an acknowledgement of the potential benefits of adopting more emerging technologies and some researchers have been actively working on their integration for the past 10 years, extensive work still needs to be done.

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