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Sensory research and Temporal Descriptive Methods: Where is this relationship going?

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ABSTRACT

It is well known that perception of food and drink is a temporal phenomenon. And it is under this premise that several temporal methods have been developed in the past 50 years trying to capture, describe and quantify these sensory changes occurring during food tasting.

More than one hand is needed to count the amount of multi-attribute temporal methods which have been developed since 1994, when the Progressive Profile was first published. From one bite to a whole portion, these methods have been used to evaluate product qualities, consumer behavior and food oral processing, among other challenges. But sometimes it seems that methods are developed faster than they can be validated.

In this presentation 363 research articles (from 1991 to 2022) using temporal descriptive methods were analyzed according to a previously validated protocol. A quantitative and qualitative synthesis of the results allowed the identification of trends in how methods were developed, refined, and disseminated. Some critical research gaps in establishing the validity and reliability of the methods were identified and discussed. Results suggest the need for general guidelines on how to implement the method, analyze and interpret data, and report the results.

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Figures and tables

Multi-attribute temporal descriptive methods

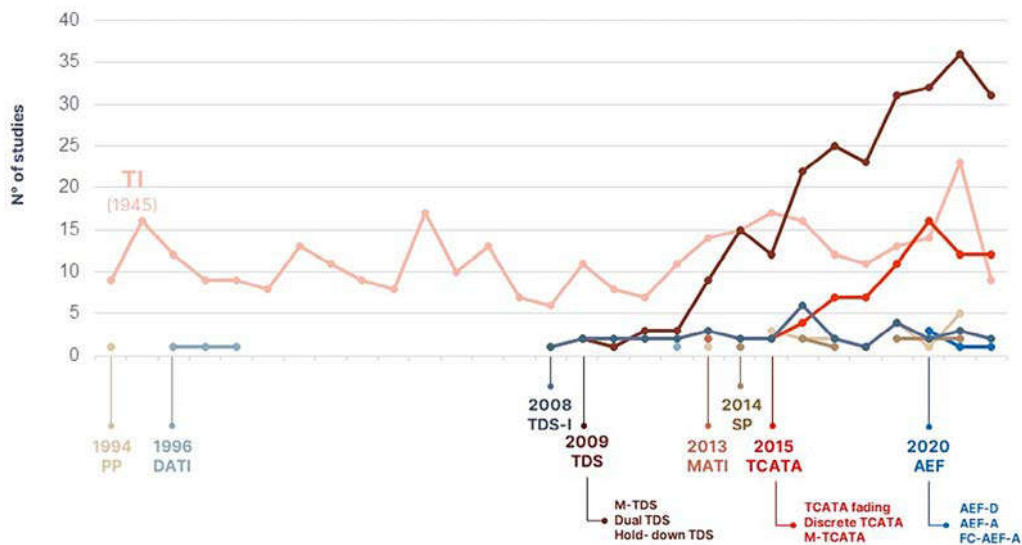


Fig. 1. Number of articles published by year and type of temporal method used.

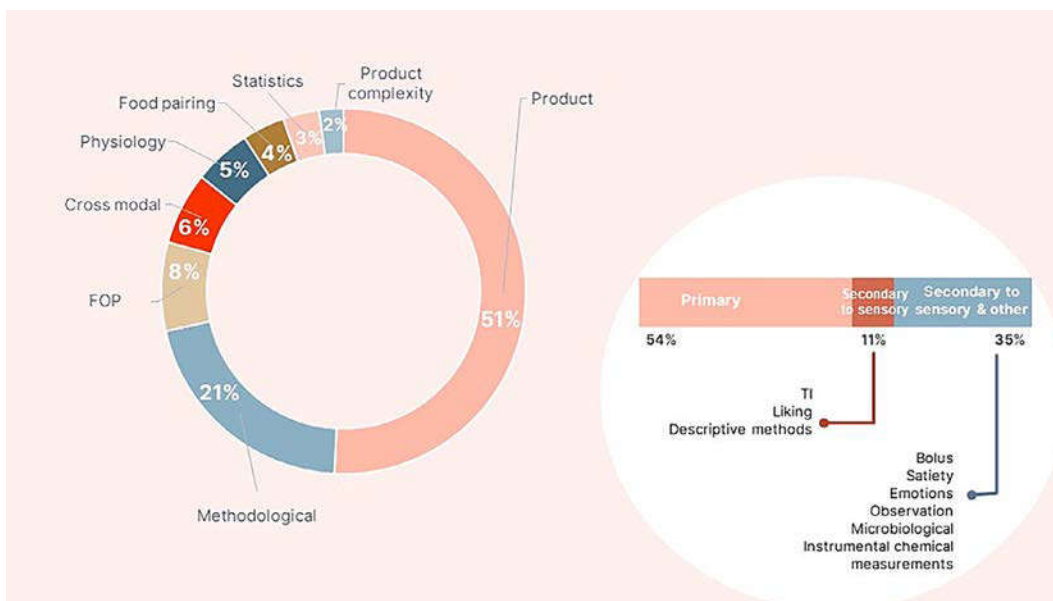


Fig. 2. Research aim when using temporal methods.

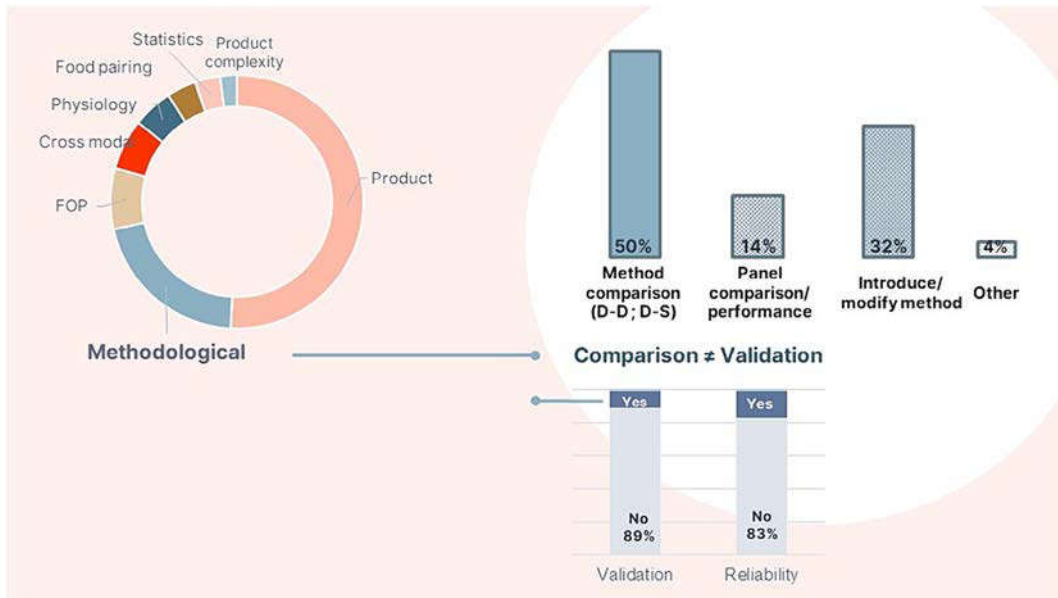


Fig. 3. Aim of research papers analyzing temporal methods.

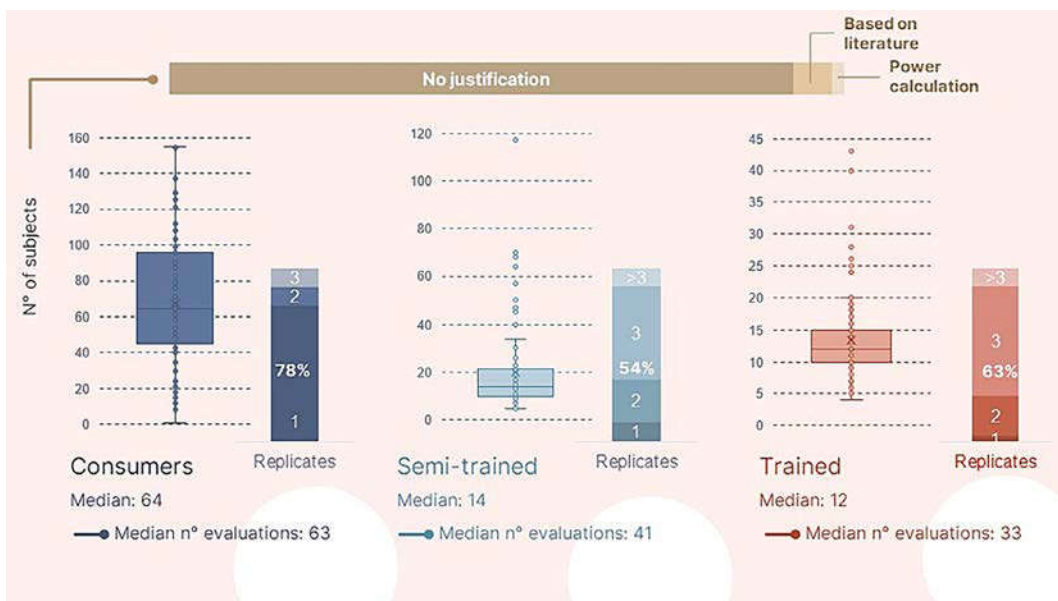


Fig. 4. Panel size and number of replicates in research articles using temporal methods.

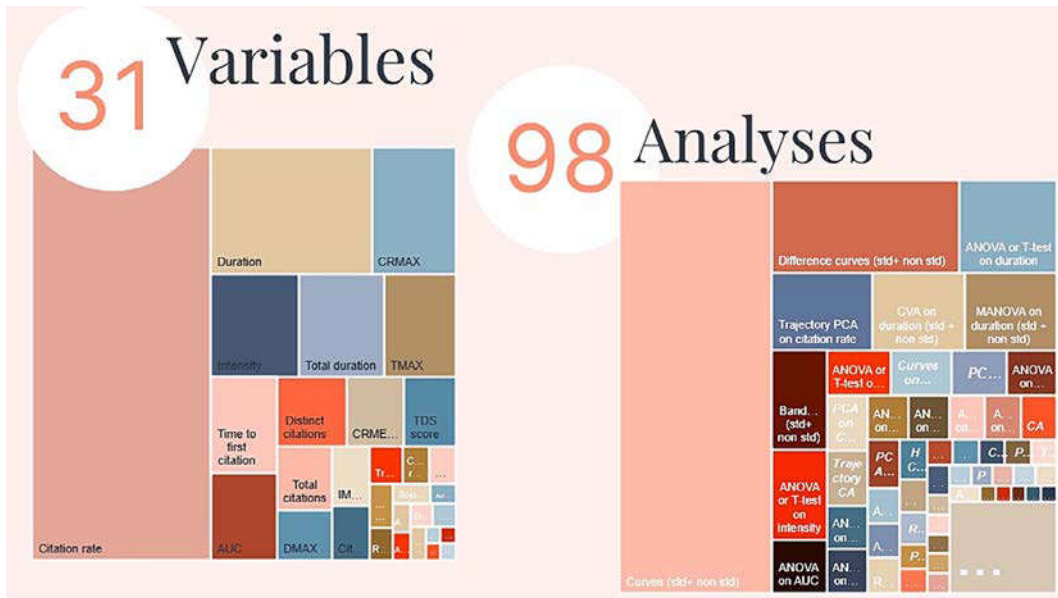


Fig. 5. Variables and types of analyses used in research papers on temporal methods.

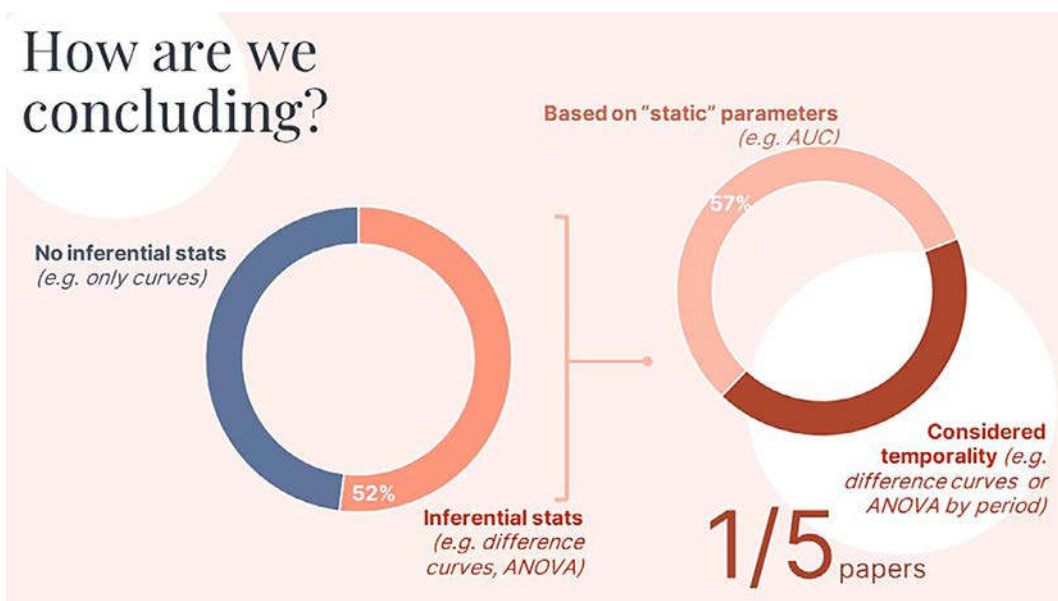


Fig. 6. Type of analyses used to conclude in research papers using temporal methods.

CRediT authorship contribution statement

M.V. Galmarini: Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **M. Visalli:** Validation, Methodology, Investigation, Formal analysis, Data curation.

Data availability

Data will be made available on request.

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Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Further reading

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Complete list of all the publications included in the scoping review:

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