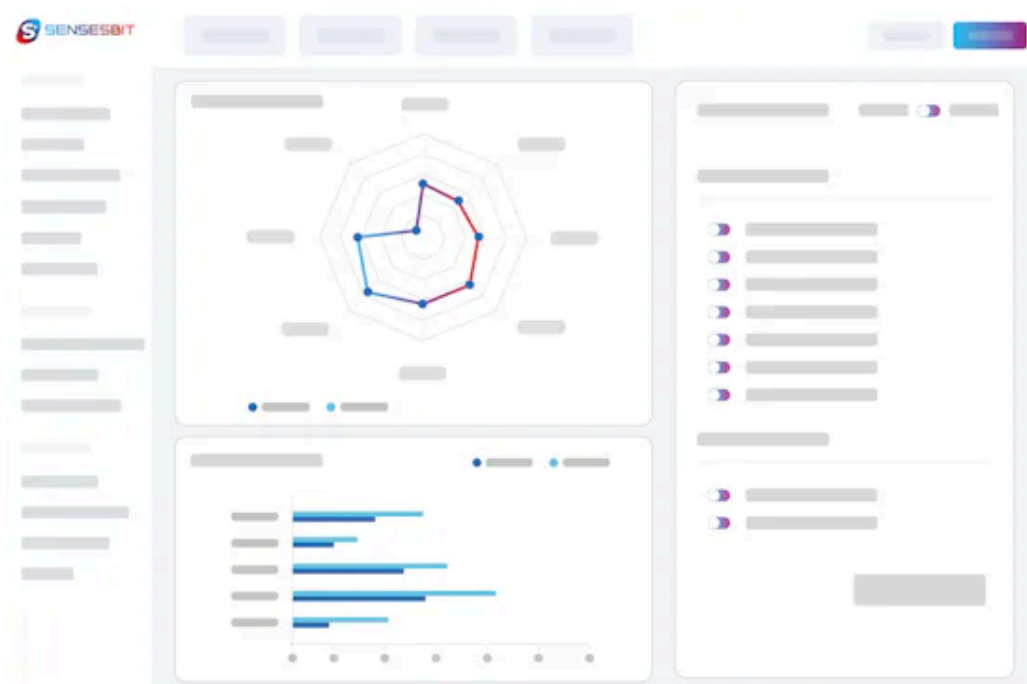SENSORY PLAYBOOKS

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TDS

Temporal techniques study sensory evolution over time. The first one to appear was Time Intensity, which measures the intensity of an attribute over time.

Due to the need to evaluate several attributes at the same time, new techniques were developed such as Time CATA, which measures the presence of attributes over time, and **TDS**, which measures which attribute dominates at any given moment.

Dominance

What is dominance?

This is the first point to clarify before applying this technique.

Dominance is defined as the attribute that captures attention at any given moment.

Therefore, at any given moment there can only be one dominant attribute.

It is important to understand that **dominance is not directly related to intensity.**

Consumers or trained tasters

Both types of panellists can be used for this type of technique. However, due to the large variability generated by making a measurement every second, it is favourable to increase the number of responses as much as possible, in order to reduce the importance of interpersonal differences.
In addition, it is more difficult for a trained taster to understand the concept of dominance, due to his or her training in measuring intensities.
Therefore, it is usually **ideal to use consumers.**

Attributes

The number of attributes to be used is limited by the attention span of the participant.
Typically between 5 and 10 attributes are used.
It is possible to use attributes from several senses, usually texture, aroma and taste.

Resources

The world of temporal techniques is vast and there is little consensus in the scientific community.
A great resource for an overview of these techniques is this article:

Multi-attribute temporal descriptive methods in sensory analysis applied in food science: A systematic scoping review (M. Visalli, M. Galmarini)

The TDS technique does not measure the intensity of the attribute, what the graph represents is the **dominance ratio**, i.e. for each second, what ratio of participants has each of the attributes selected at a given time.

The time in seconds is represented on the X-axis and the dominance ratio on the Y-axis. The evolution of the dominance of each attribute is represented by a different coloured line for each attribute.

In addition, two other lines are represented:

The chance line (red colour) ▶ This is the line below which the choice of attributes is completely random. It is calculated as follows: 1/no. of attributes.

The line of significance (black colour) ▶ It is the minimum value above which the proportion would be considered significantly greater than the chance line. It is calculated using a confidence interval to the binomial distribution based on a normal approximation:

$$P_s = P_0 + 1.645\sqrt{\frac{P_0(1 - P_0)}{n}}$$

P0: Chance line
Ps: Significance line