

Consensus profiling an often-underestimated ally for successful and agile product development!



Background & Objective

Descriptive Sensory Profiling is the standard tool for measuring a product’s sensory characteristics. However, time and cost can be obstacles to its use.

This study compared Consensus Profiling with QDA-based Descriptive Profiling to assess baked beans and Cheddar cheese.

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Test Design

Two sample sets:

- Eight cheddar cheeses (CC)
- Eight brands of baked beans (BB)

Two methods:

Consensus Profiling: 8 panellists; 1 replicate; 14 attributes for CC; 12 for BB.

Descriptive Profiling: 12 panellists; 3 replicates; 36 attributes for CC; 29 for BB.

The number of panel sessions was reduced by 60% by using Consensus Profiling.

Findings

Correlation of common attributes:

In the CC, eight of the 14 common attributes were strongly correlated ($r > 0.75$).

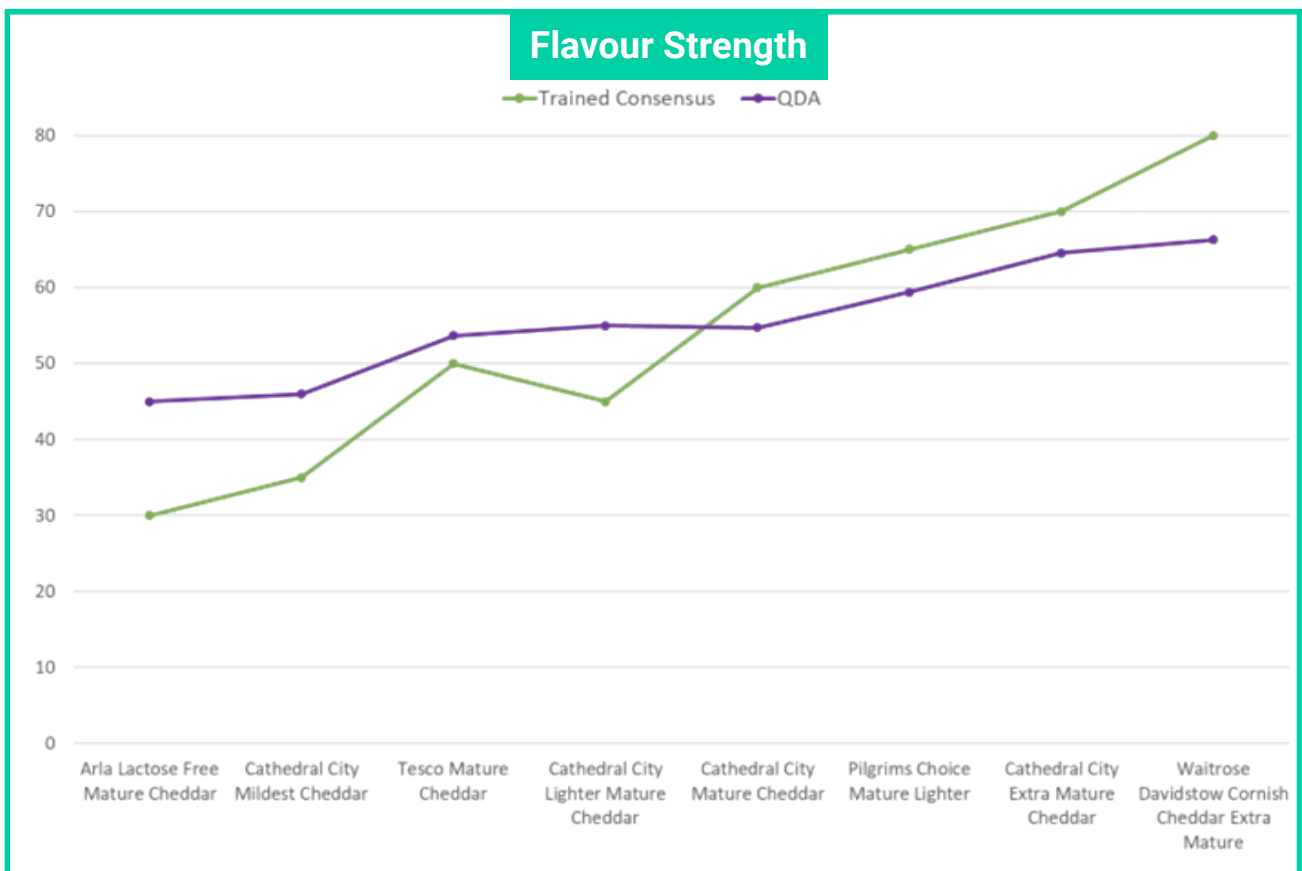
For BB, there was only one attribute with a strong correlation; for eight of the 12 attributes $r < 0.5$.

Correlation of common attributes	R (Pearson's)	Cheddar Cheese	Baked Beans
Strong	$r \geq 0.75$	8	1
Moderate	$0.5 \leq r < 0.75$	3	3
Weak	$0.25 \leq r < 0.5$	2	4
None	$r < 0.25$	1	4

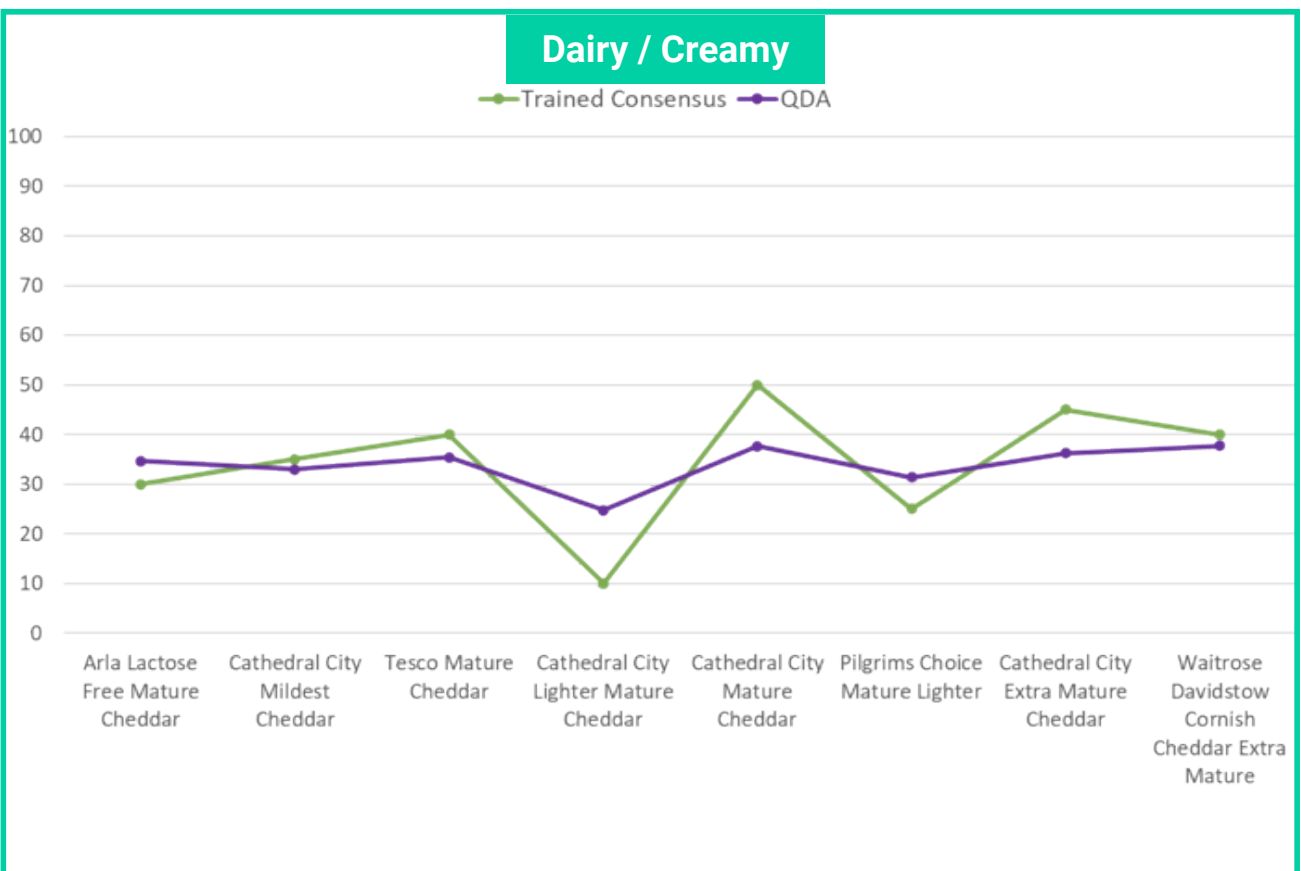
Inherent product variability (ratio of beans to sauce) may explain fewer strong correlations in the BB study.

Attribute scoring:

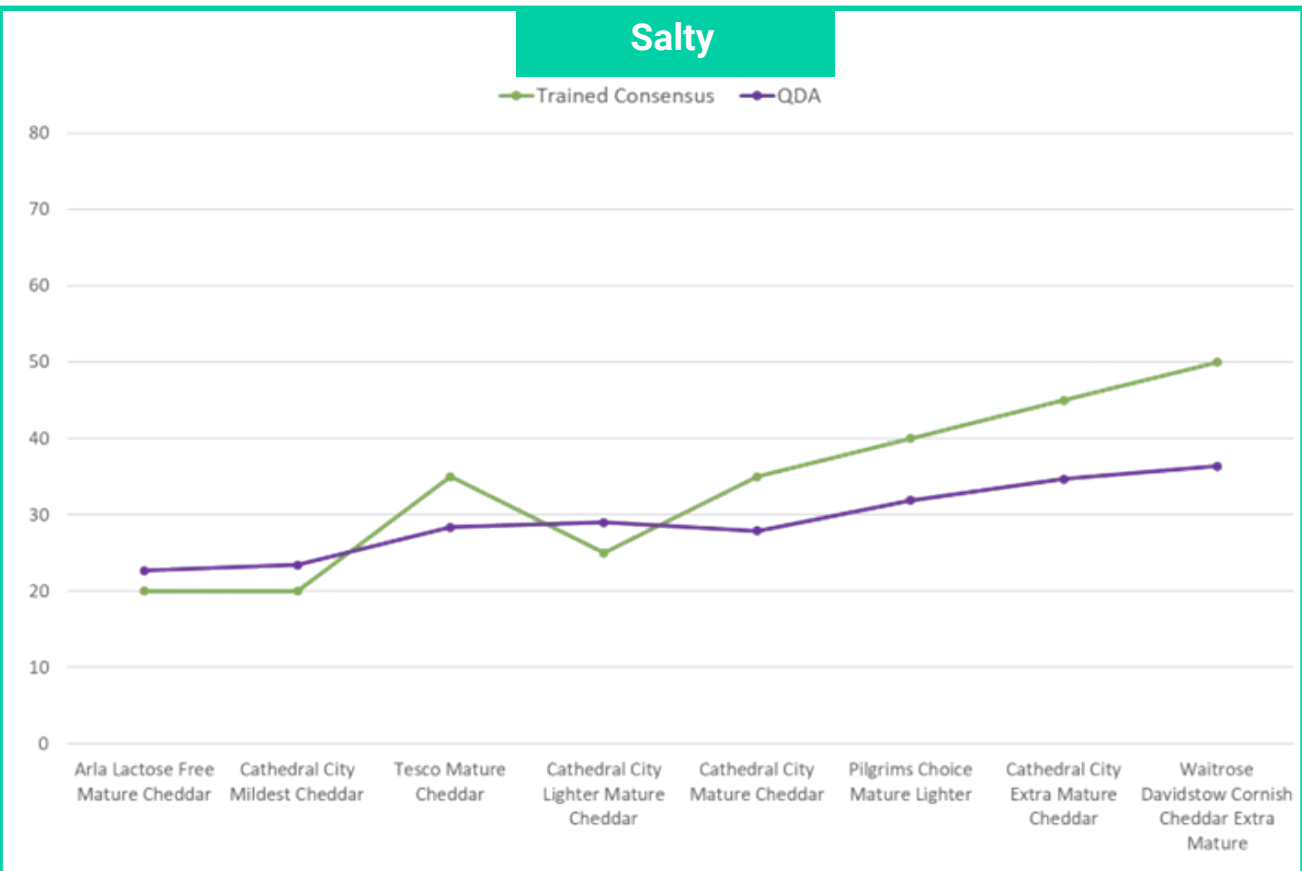
Consensus profiling differentiated more between the samples. This was because the panel ensured that there was a contrast in scores assigned to products they agreed were different.



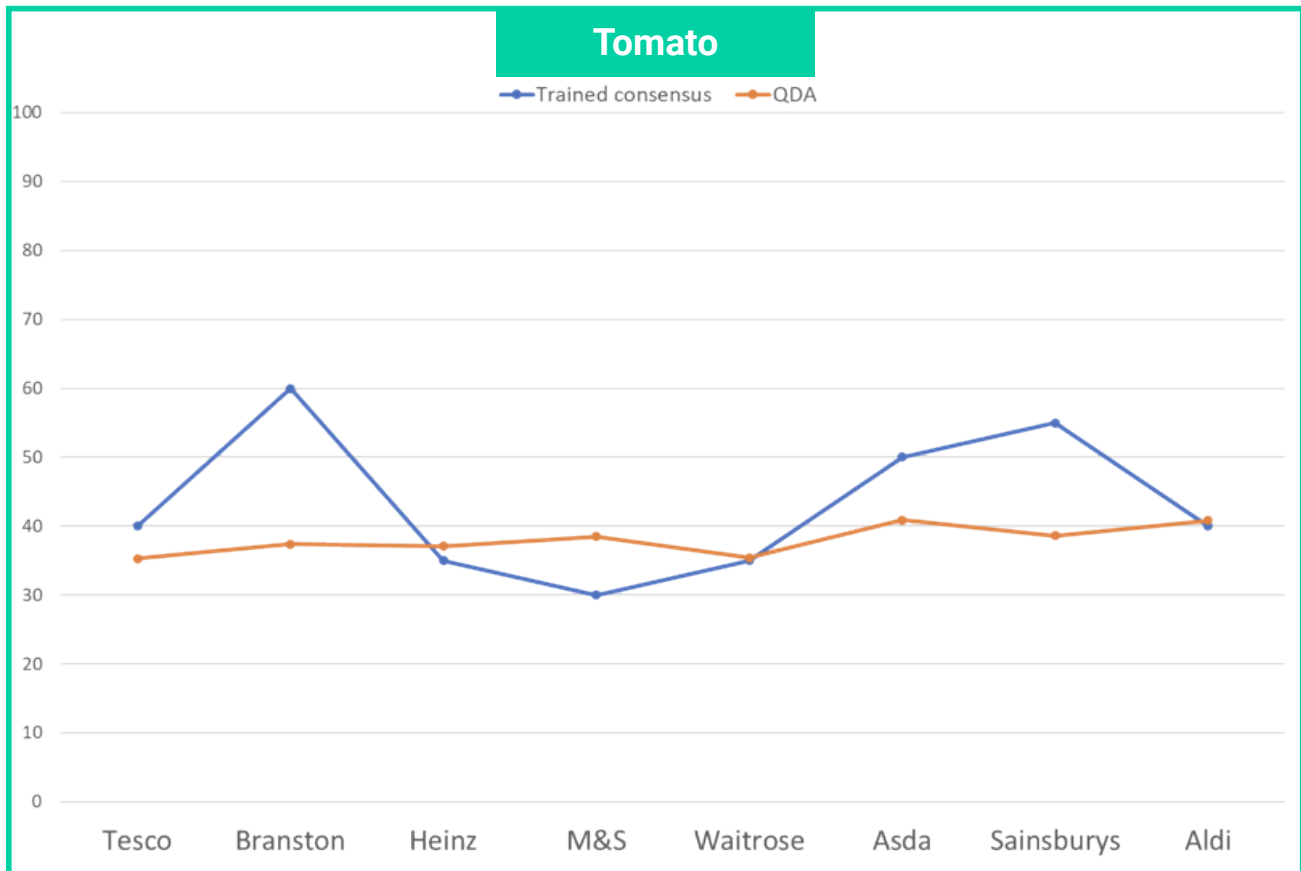
(Flavour strength $r=0.96$)



(Dairy/Creamy $r=0.94$)

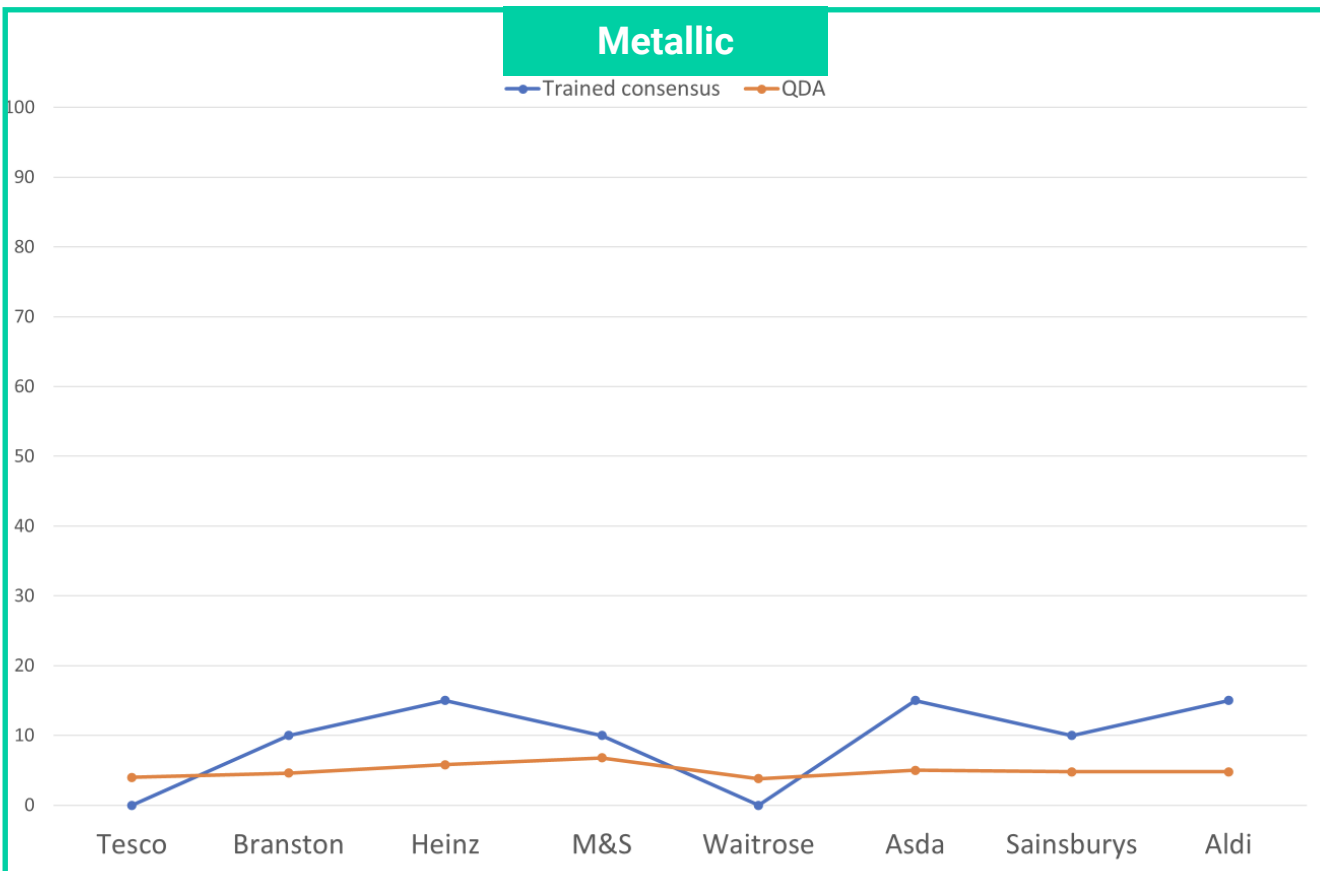


(Salty $r=0.94$)



(Tomato $r=0.24$)

Consensus delivered some zero scores where a low score was recorded in Descriptive e.g. metallic flavour in BB.



(Metallic $r=0.59$)

Conclusion

- Descriptive Sensory Profiling remains the gold standard solution for defining the sensory experience thereby supporting product development and delivering consumer insight.
- Consensus Profiling is a strong alternative where the objective is to:
- Focus on a small number of pre-defined and key sensory attributes
 - Gain a broad understanding of the main differences between key brands
 - Select from a large sample set for consumer research