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Delivering Great Cocktails Through Full Serve Testing

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Diageo Innovation

Background

- Sip testing is a good screening tool, but does not always reflect liquid performance on full serve.
- Attributes may build as the drink warms up, or palate gets more saturated during consumption.
- Attributes may fade as ice melts, but then may build again as liquid warms.
- Testing on full serve must respect daily and weekly alcohol guidelines - Responsible Research agenda.
- Using technical judgement to balance pace with data and knowledge.
- Least Amount of the Most Powerful Research.

Some Applications

- Focus on cocktails over ice, but many applications.
- Beer – build up in bitterness, loss of carbonation, flavor build as beer moves from chilled to warmer.
- Flavored Malted Beverages (FMBs) – e.g., sweetness build and loss of carbonation.

About the Studies

- Applied tool that enables changes in sensory profile over consumption to capture key liquid performance indicators.
- Adaptation of Product Boredom methodology.
- Cocktails with ice where delivery of overall flavor impact, alcohol taste and basic tastes are all key.
- Liquids developed after initial sip test screening, either internally or with consumers.
- Provide confidence to submit final liquid for confirmation testing directly or with final tweaks.

Questionnaire Design Format

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> **Initial Sip – measure intensity.**

Sweetness								
Not at all sweet								Very Sweet
❑	❑	❑	❑	❑	❑	❑	❑	❑
1	2	3	4	5	6	7	8	9

> **Half Serve– measure intensity relative to initial sip.**

Sweetness								
Less Intense				Same As				More Intense
❑	❑	❑	❑	❑	❑	❑	❑	❑
-4	-3	-2	-1	0	1	2	3	4

> **Full Serve – measure intensity relative to half serve.**

Sweetness								
Less Intense				Same As				More Intense
❑	❑	❑	❑	❑	❑	❑	❑	❑
-4	-3	-2	-1	0	1	2	3	4

Study 1
Vodka Based Cocktail

Study Design - Caipiroska

- 3 formulations (current liquid and 2 modifications)
- Modified liquids slightly lower ABV than Current product to address consumer feedback on sensory delivery.
- US based Employee Panel – sensory booths test (n=56)
- Strength of Flavour, Spirit Taste, Lime, Sourness, Sweetness, Bitterness
- Serving size = 84ml with measured quantity of ice.

Alcohol Taste – Study 1

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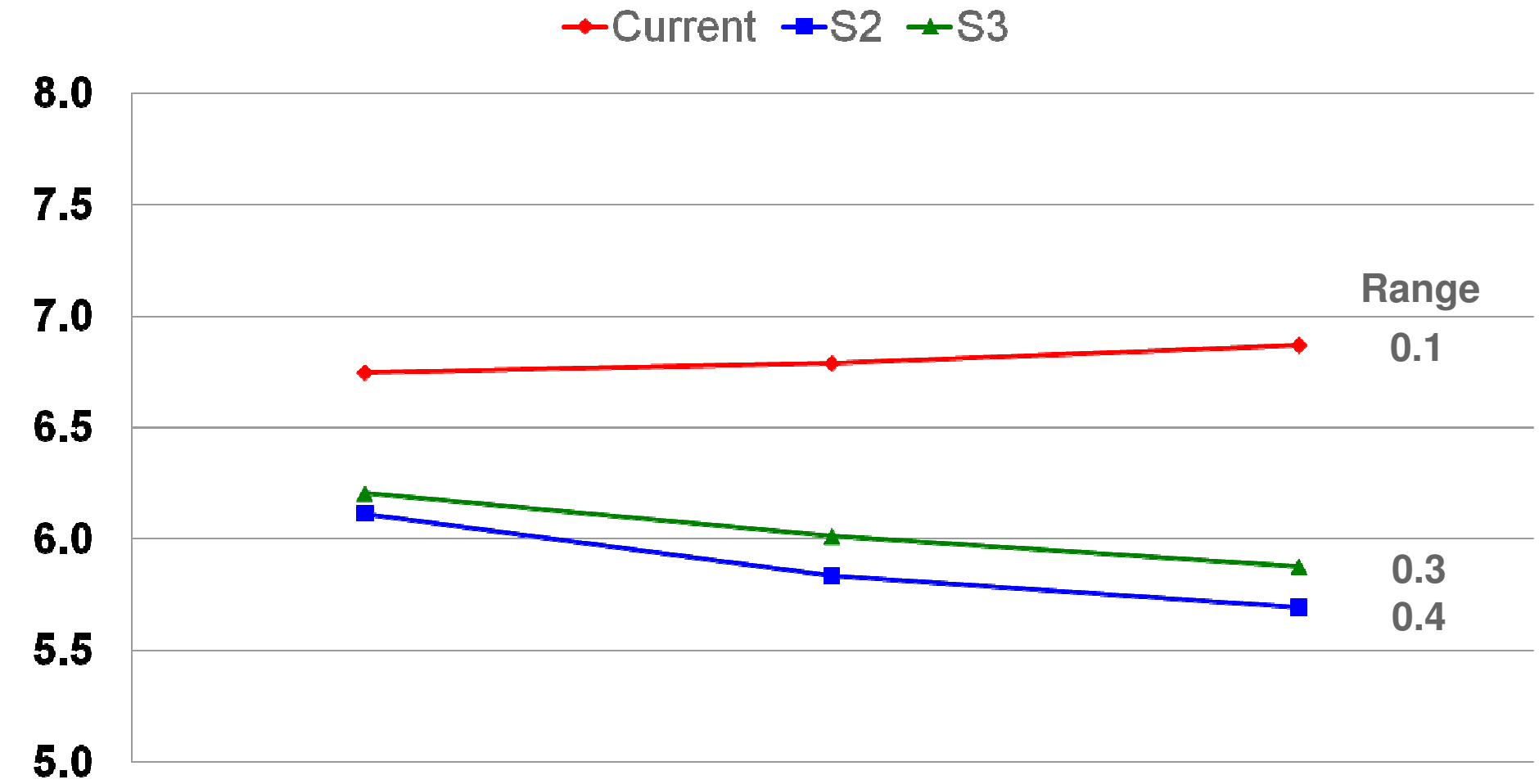
Tukey 90% = 0.6



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Strength of Taste – Study 1

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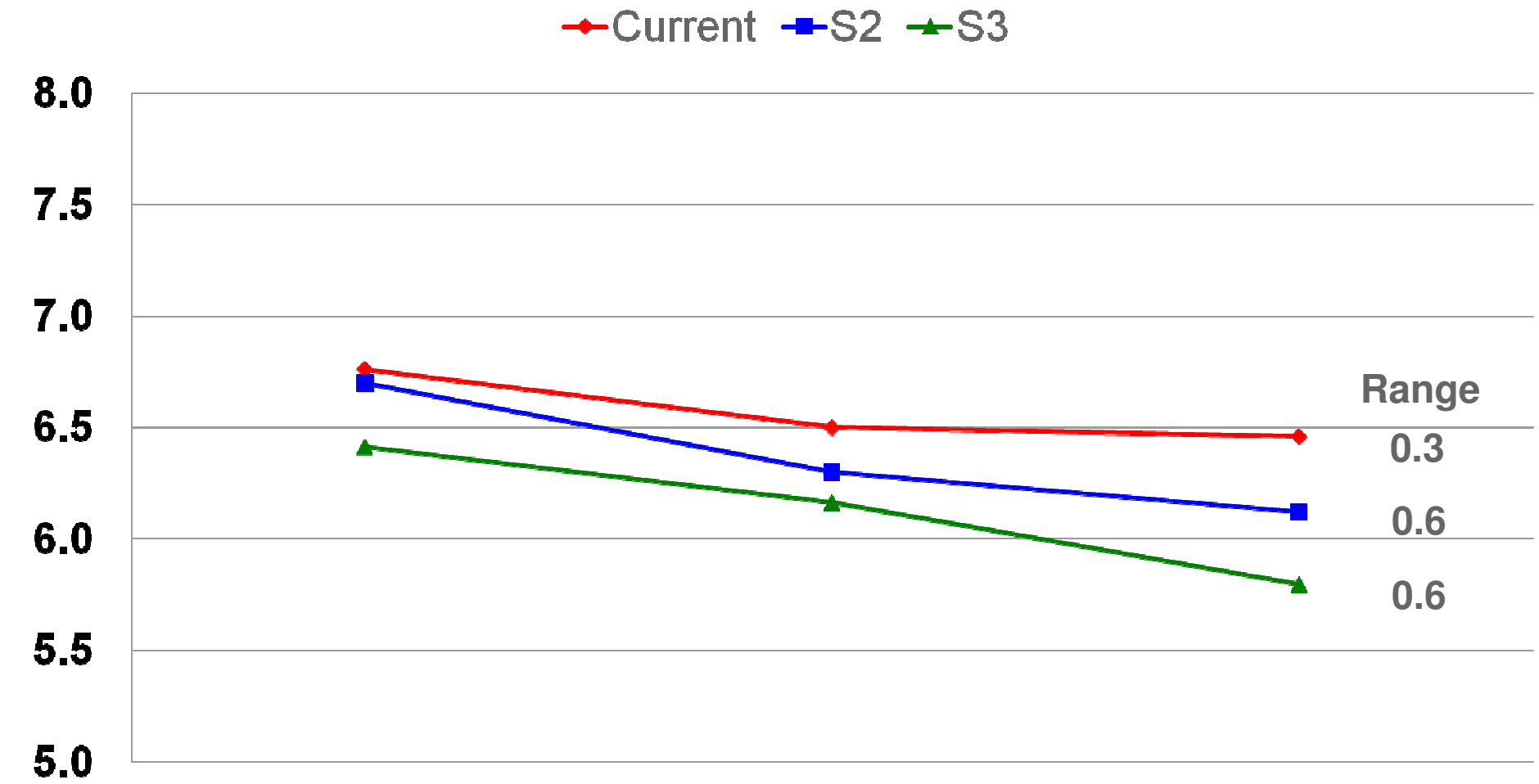
Tukey 90% = 0.7



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Lime Taste – Study 1

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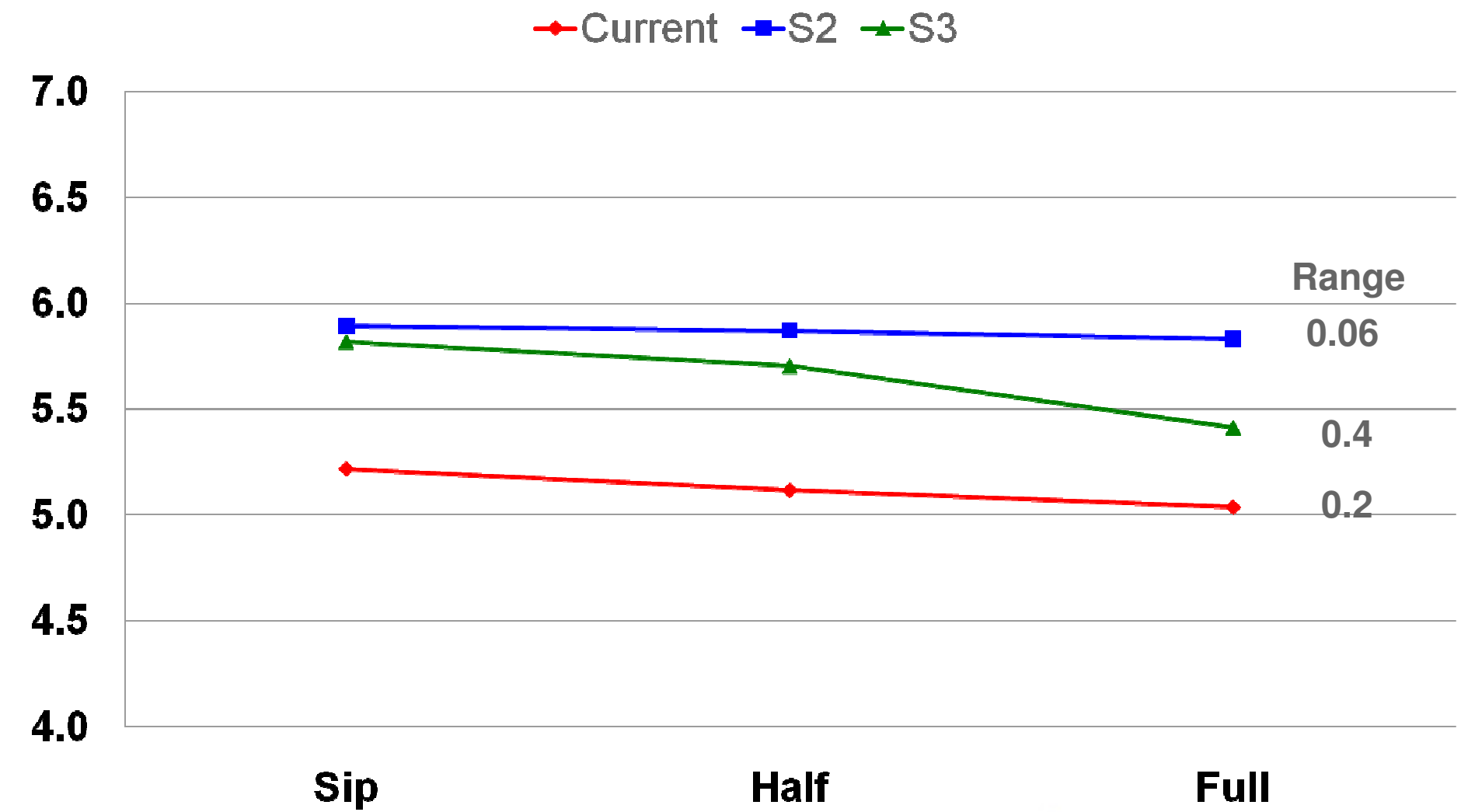
Tukey 90% = 0.8



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Sour Taste – Study 1

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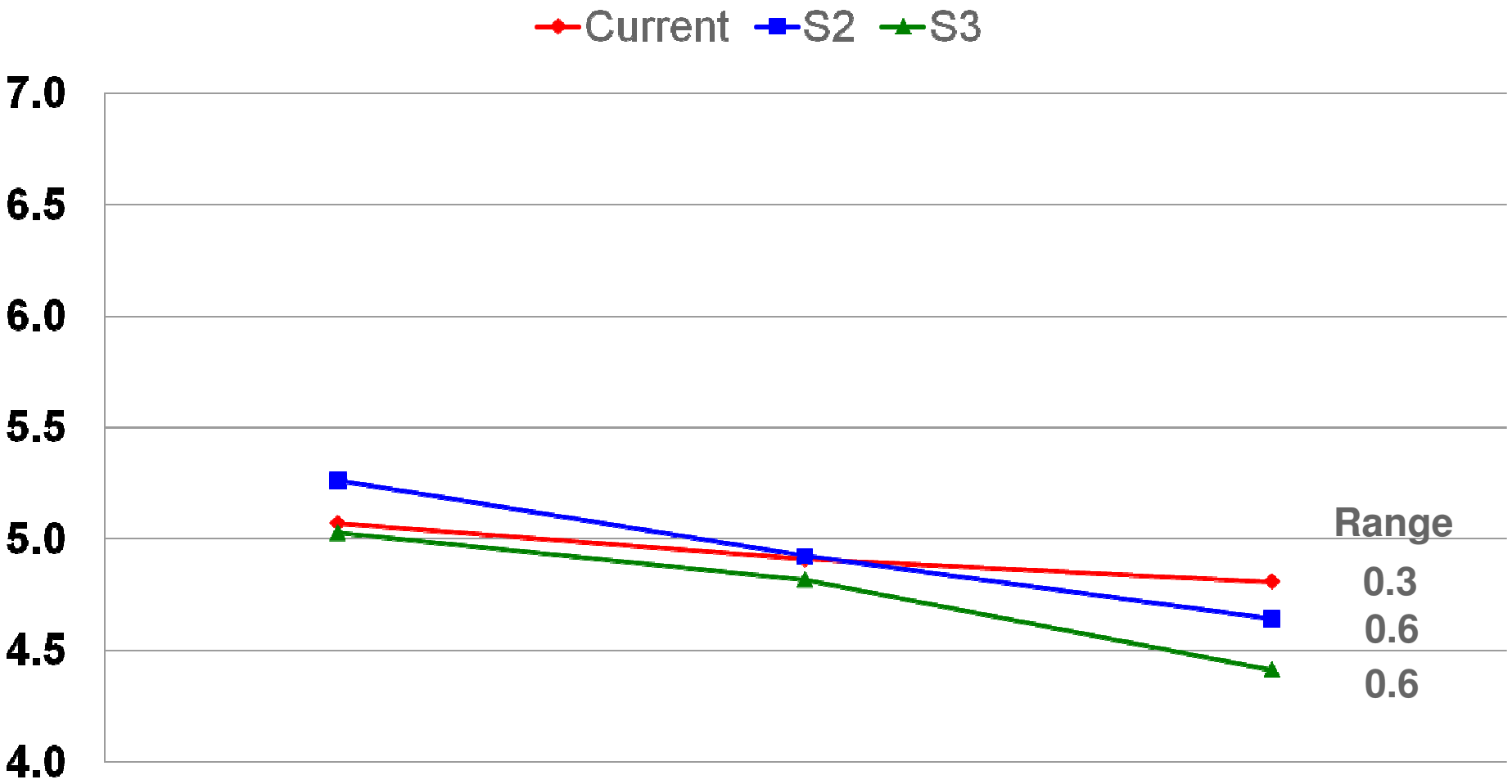
Tukey 90% = 0.8



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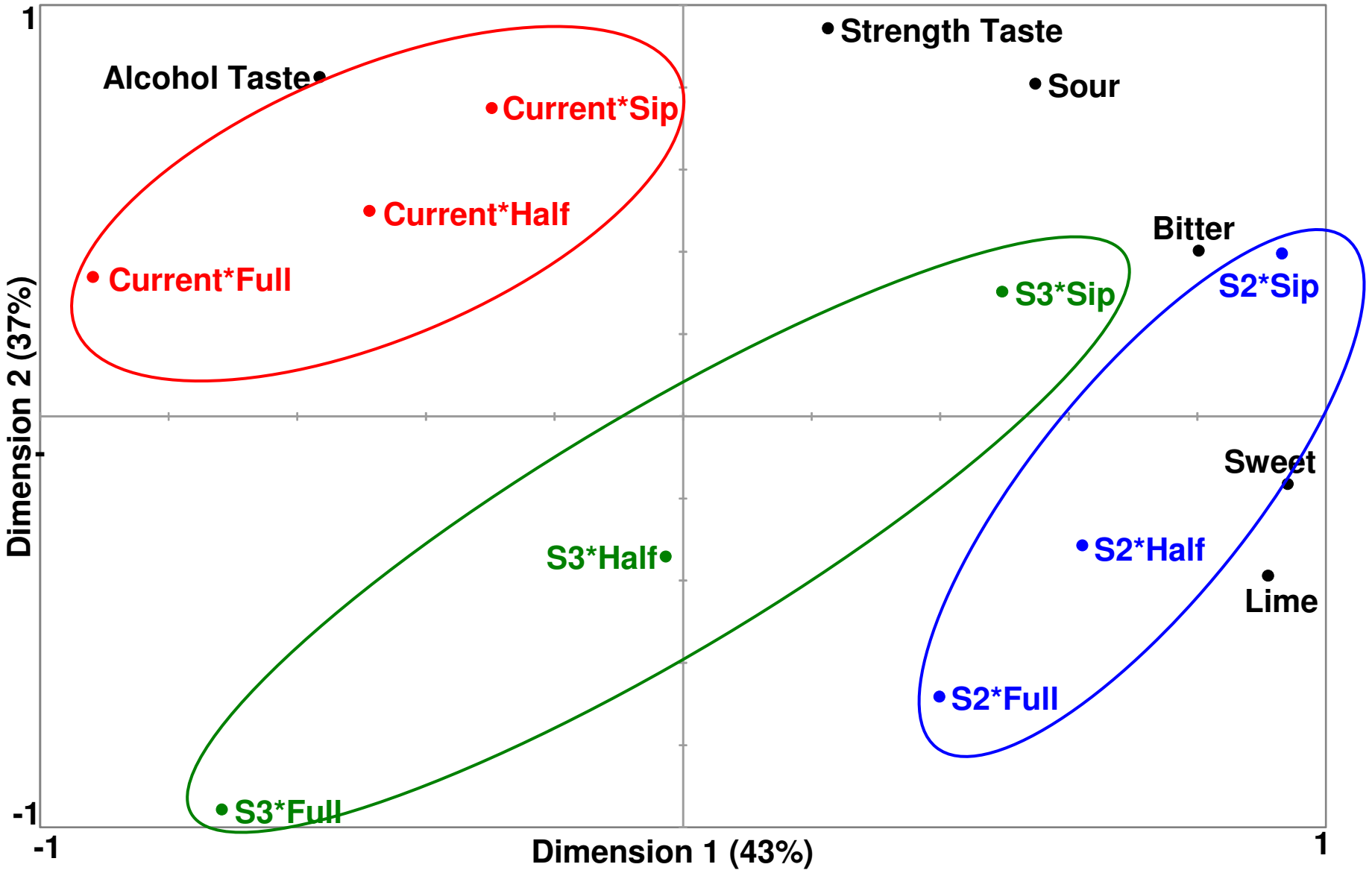
Summary of First Cocktail Study



Key Points – Study 1

- Reduction in alcohol led to choice of a liquid with better flavour balance as no longer dominated by alcohol taste through the consumption experience.
- Biplot summary helped illustrate that S2 cocktail showed less change in its sensory profile through consumption and ice melt.
- Project team accepted sensory recommendation and progressed with S2.

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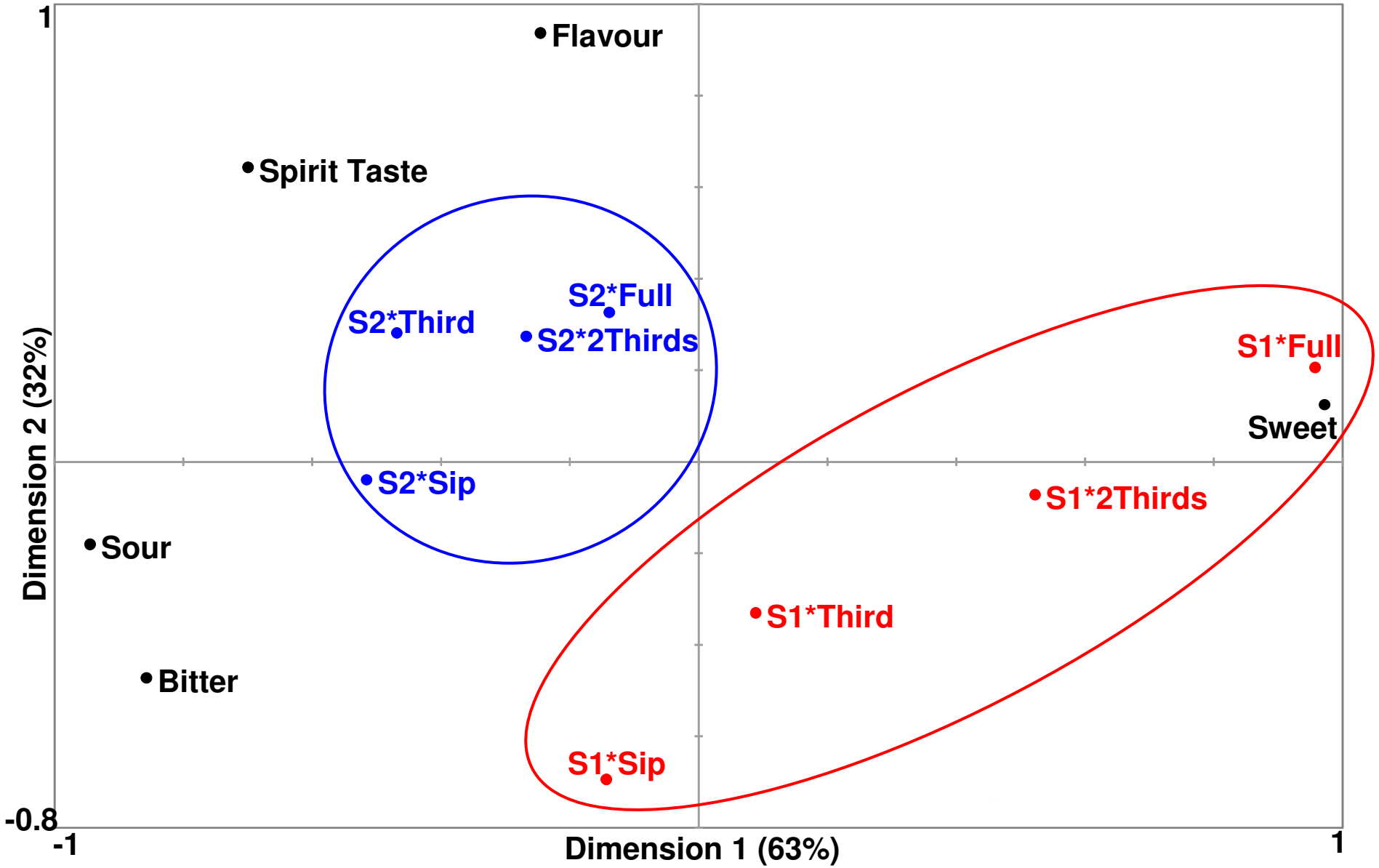
Study 2
Whisky Based Cocktail

Study Design – Whisky Cocktail

- 2 formulations (selected by the project team based on credible taste delivery)
- Objective was to deliver a credible whisky based cocktail with strong consumer appeal.
- European based Employee Panel – CLT type (n=41)
- Strength of Flavour, Spirit Taste, Sourness, Sweetness, Bitterness
- Serving size = 150ml with measured quantity of ice.

Summary of Second Cocktail Study



Sweet Taste – Study 2

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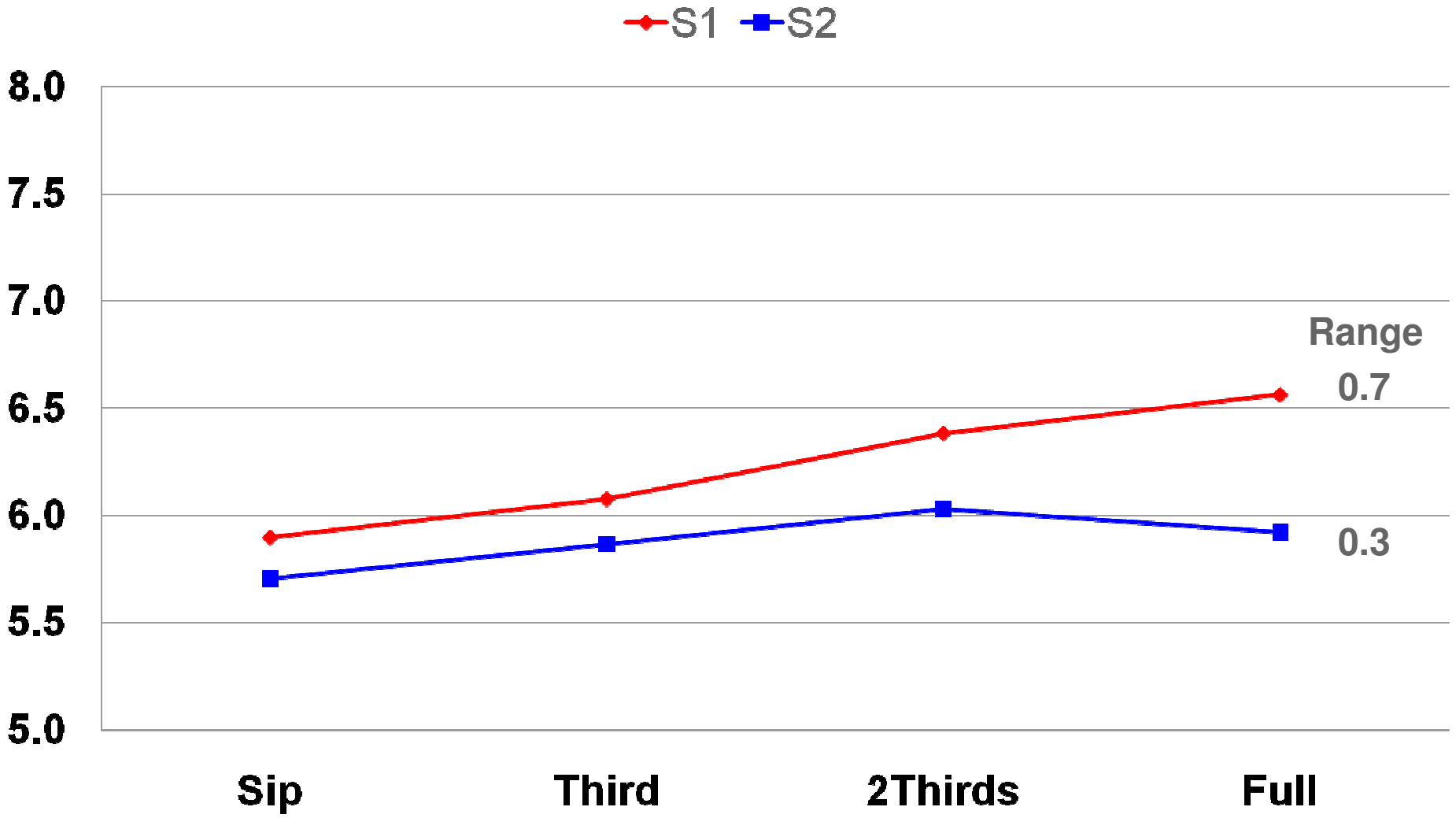
Tukey 90% = 1.3



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Sour Taste – Study 2

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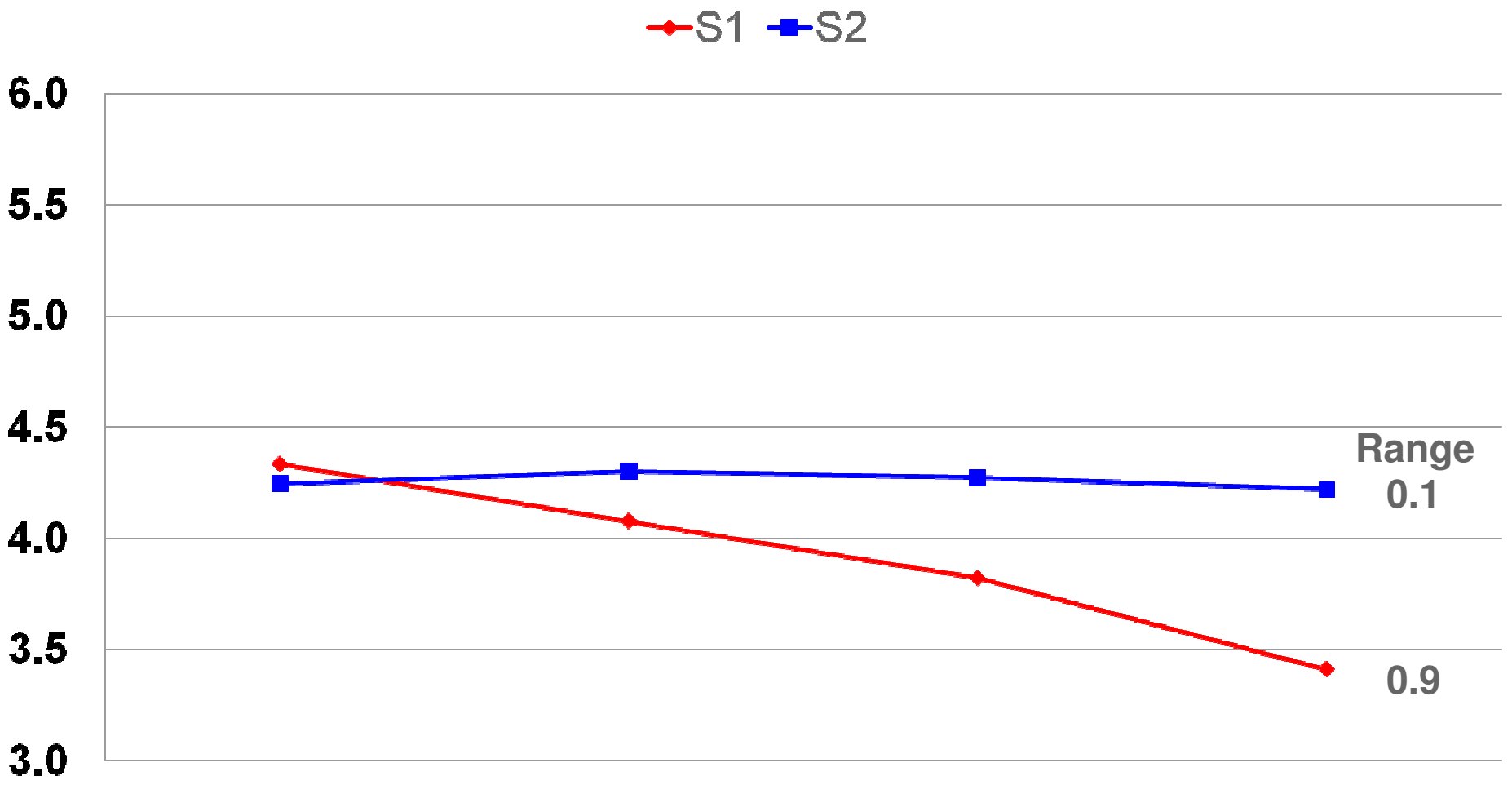
Tukey 90% = 0.9



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Bitter Taste – Study 2

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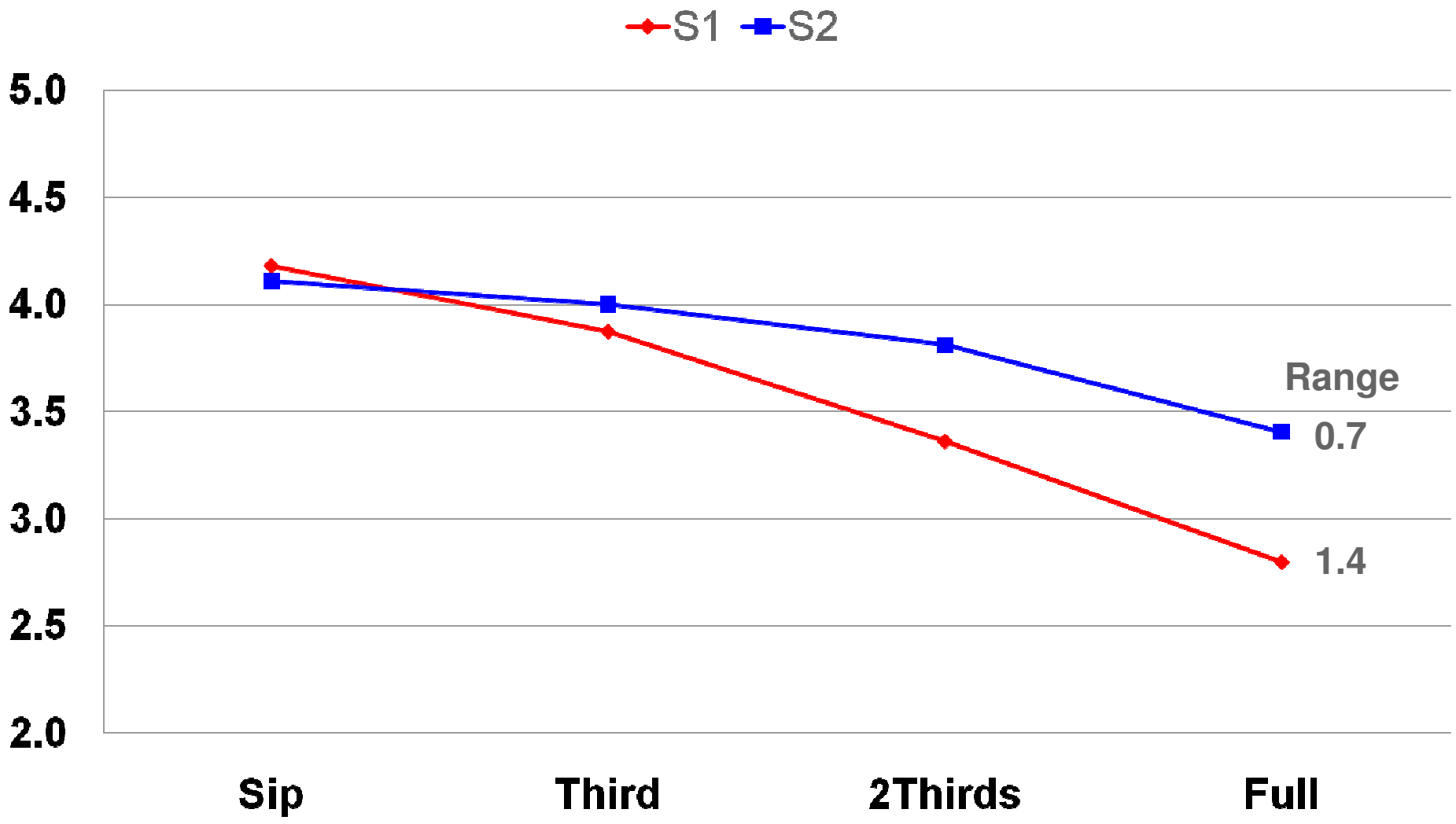
Tukey 90% = 1.1



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Key Points – Study 2

- More notable changes over the consumption experience compared to Study 1.
- S2 was more constant in sensory profile over consumption.
- Profile of S1 was considered less challenging.
- Final decision was based on combining judgment and the attribute build data in the context of the agreed liquid brief and market knowledge.

Overall Conclusions

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- Key and consistent changes in sensory delivery indicated best liquids based on internal knowledge of the key liquid performance indicators.
- Biplots can help obtain an overall perspective on changes in each sample over the consumption experience – compliments the simpler line charts.
- Employee panels using product users can provide essential guidance backed by judgement prior to launch or final confirmation testing.
- Leverage team experience to put context on the data – SCG role to ensure objective focus.

Next Steps and Questions

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- Build knowledge on how basic tastes and flavour interactions change with ice melt or warming when just chilled.
- Challenge that parity liking on sip testing eliminates non-starters, but does not always provide confidence for the real consumer consumption experience.
- Consumers drink at different rates so how can we better factor this in.
- Could we use JAR shifts as an alternative data collection method?
- How does the approach compare to Dominance of Temporal Sensations with trained panels?