Model: Claude Sonnet 5 High
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Prompt: I'm working with a customer who is trying to figure out the right combination of price and features for kitchen blenders that they want to sell the price points are a $30 $50 or a $100 blender. The buttons that could be included are pulse, ice crush, blend, liquefy, generic on/off, and speeds 1-5. Create a conjoint study that could be used to help this customer identify the price point and feature list that would work best for the audience of potential blender buyers.
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This is a conjoint study design request for a kitchen blender — price points and feature/button combinations. I'm thinking through what makes a solid conjoint analysis design for this professional deliverable.

I need to decide on the conjoint type (choice-based conjoint seems most robust here), define attributes and levels, work out the experimental design and sample size, and plan the analysis approach and questionnaire flow. The tricky part is how to treat the button/feature set — pulse, ice crush, blend, liquefy, on/off, speeds 1-5 — since these aren't simple mutually exclusive levels but more of a feature bundle, which points toward possibly needing a menu-based conjoint structure instead of a standard single-attribute treatment.

Given it's blenders with only six candidate features in a simple B2C context, I lean toward Option A since bundling into manageable feature-set levels avoids the complexity of a full CBC design. The "speeds 1-5" item is ambiguous though — it could be a single multi-speed control feature rather than discrete speed buttons, so I'll treat it as one combined attribute representing a multi-speed dial.

Reconsidering the six buttons (pulse, ice crush, blend, liquefy, on/off, speeds 1-5), I think the most practical design groups these into a "Control Features" attribute with a few levels representing increasingly feature-rich bundles, since a full factorial across six binary features would blow up the design space unnecessarily.

I'm sketching a concrete CBC structure: price (3 levels), speed control (on/off, 3-speed, 5-speed), pulse button (yes/no), ice crush button (yes/no), and a combined blend/liquefy preset attribute, to keep the design manageable while still capturing the key feature tradeoffs.

Given this is paid client work matching Z's market research expertise, I should produce a full professional conjoint study design covering the business objective, why CBC is the right methodology, attribute/level definitions with reasoning, design considerations like prohibitions for unrealistic feature combos, and the experimental setup.

I'll also need to cover sample size, a mockup choice task, screening criteria for kitchen blender buyers, the analysis plan using hierarchical Bayes and market simulation, and the final deliverable of optimal feature-price combinations, possibly noting tools like Sawtooth or Qualtrics. I should keep the formatting warm, scannable, and structured per Z's preferences, avoiding em dashes and horizontal dividers.

I'm weighing whether this deserves an artifact given its length and structured, multi-section nature with tables, versus just answering inline since it's a working internal response rather than a polished client deliverable. Given the structure and reference value, it leans toward artifact treatment even though the user didn't explicitly ask for a document.

Looking at the available tools, I see bash_tool, create_file, present_files, view, and str_replace rather than a separate artifact tool, which tells me this environment treats artifacts as files written to /mnt/user-data/outputs and shared via present_files. So I'll treat this as the file-based workflow rather than the chat-artifact mechanism.

Since there's no explicit request for a Word document, I'll default to creating a markdown file for the conjoint study design and present it, while keeping my chat response as a brief contextual summary rather than duplicating the full content inline. Given the complexity and length of this design, a file genuinely makes sense here rather than just answering in chat.

Now I'll draft the actual content, covering attributes, design, sample size, choice task mockup, and analysis plan. I should also be careful to flag assumptions and gaps rather than inventing specifics I don't actually know—like exact budget, target market, or cost data—since the user hasn't provided these details.

Given the complexity, I'll decide on a defensible default approach (treating features as a bundled attribute rather than full menu-based choice) and briefly explain the alternative, letting the user weigh in if they'd prefer a different structure.

I'm sketching out the attribute and level structure: price at three tiers, speed control ranging from basic to multi-speed dial, pulse and ice-crush as yes/no toggles, and preset bundles as a tiered attribute. With five attributes multiplying out to over a hundred combinations, I'd rely on a fractional factorial design to generate an efficient subset of choice tasks, likely around 10-15 tasks with a few concepts each.

I'm also considering sample size guidance using the Johnson & Orme rule of thumb, which relates respondent count to the number of tasks, alternatives, and the largest attribute's level count -- I'll flag this as an approximate heuristic rather than a precise calculation, landing on something like 12 tasks with three concepts plus a "none" option per task.

I'll honor that formatting preference, no dividers or em dashes. Now I'm mapping out the deliverable structure: research objective, recommended methodology (CBC vs MBC tradeoffs), attributes and levels table, design logic with bundling rationale and prohibited pairs, then choice task design parameters.

I'm continuing to outline the remaining sections: a sample choice task mockup, screening criteria, sample size guidance with caveats, the analysis plan covering HB utilities, importance scores, willingness-to-pay, market simulation, and TURF-style optimization, plus deliverable outputs, explicit gaps where I need client data like market share and costs, and practical execution recommendations on tools and platforms.

I should flag the gaps clearly: I don't know the actual respondent budget, whether this is US-only, the current competitive pricing landscape, or manufacturing cost/margin constraints per feature, all of which affect what's realistically viable to build. Now I'll draft the actual document as a markdown artifact, covering the research question, recommended approach, attributes and levels table, and design notes.

I'm outlining the remaining sections: an alternative MBC approach for feature-level pricing sensitivity, choice task design with a sample task, target audience and screening, sample size, analysis plan, deliverables, and open questions for the customer. I want this to read as a genuinely professional document using terminology Z will recognize from her research background—CBC, HB estimation, part-worths, IIA, none option, prohibited pairs, TURF, WTP—and I'm thinking through logical constraints like prohibited attribute-level pairings that wouldn't make sense together.

I'm reasoning that artificially prohibiting price-feature combos defeats the purpose of conjoint analysis, since the whole point is discovering willingness to pay for more features. But respondent realism still matters, so I'm resolving the blend/liquefy confusion by structuring them as a single ordinal attribute (None < Blend only < Blend+Liquefy) rather than needing explicit prohibitions.

On/off isn't a real differentiator since every blender has it, so I'm treating it as a baseline feature rather than a conjoint attribute. For task design, I'm leaning toward 3 concepts plus a "none" option across 12 tasks, balancing standard CBC practice against respondent fatigue given blenders are a low-to-moderate involvement category.

For sample size, I'm applying the Sawtooth rule of thumb (n ≥ 500c/ta) which gives a bare statistical minimum around 42 respondents, but noting that real commercial studies need 200-400+ for a robust total-market model, and more if subgroup analysis is required.

Since I don't know what subgroup cuts the customer needs, I'll flag that as an open question rather than guess. I should also note screening criteria — targeting actual/potential blender buyers and excluding professional food service — and plan to include a clean design summary table of attributes and levels, writing the full structured document with headers and tables in the markdown file itself while keeping my conversational response brief.

Given the length and reusable, client-deliverable nature of this content, creating a file is the right call rather than answering inline — this fits squarely within the kind of structured reference content worth saving. This also aligns with the user's work as a consultant doing contract market research, though I don't need to call that out explicitly in my response.

I'll write this as an expert-level working document for her to use in designing the study for her client, keeping it technically appropriate but scannable and well-structured. I'll name the file kitchen-blender-conjoint-study-design.md and move on to drafting the full content.

I'm deciding to frame the approach as Choice-Based Conjoint with attribute bundling, while noting menu-based conjoint as an alternative if she wants individual feature economics. I also

want to flag price-by-feature interaction effects as something worth watching, since main-effects CBC may not fully capture cases where a feature bundle only sells well at a certain price tier.

I'm also considering whether to suggest a brand attribute, but since I don't have competitor context, I'll flag that as an unknown. For identifying the optimal feature set, I want to recommend a market simulator paired with TURF-style reach analysis across simulated configurations, plus a sensitivity analysis comparing specific SKU price points against each other and against competitors -- though again, competitor data is a gap I should note.

Now I'm putting together the actual deliverable file with headers and tables, aiming for roughly 900-1400 words, and since it's markdown rather than docx I don't need to check the docx skill instructions.…

Kitchen Blender Conjoint Study Design

Research question

What combination of price ($30 / $50 / $100) and control features drives the strongest purchase preference among kitchen blender buyers, and is there a feature-price combination that maximizes preference share (or revenue, if unit economics are added later)?

Recommended methodology: Choice-Based Conjoint (CBC)

CBC is the right tool here because the customer's real decision isn't "which single feature matters most," it's "which bundle of price and features wins in a competitive choice." CBC simulates that directly: respondents repeatedly pick their preferred product from small sets of realistic-looking blenders, and the resulting data lets you estimate part-worth utilities for every attribute level, then simulate market share for any hypothetical product lineup.

The button problem: bundle vs. individual features

Six candidate buttons (pulse, ice crush, blend, liquefy, generic on/off, speeds 1-5) create 2^6 = 64 possible combinations if tested individually. That's too many for a clean CBC design, and several combinations aren't realistic (liquefy without blend, for example, doesn't map to how people understand blender controls). I collapsed the button list into a smaller set of attributes below. This is the standard move when a "feature list" question is really a "how much control complexity" question.

If what you actually need is individual feature-level pricing (e.g., "what's ice crush worth on its own, in dollars"), the right tool is a menu-based conjoint (MBC) or adaptive CBC where each button is a separate yes/no toggle and price recalculates dynamically as respondents build their own blender. That's a heavier build (needs different software logic) and a different respondent

experience. I'd only recommend it if the customer specifically wants an à la carte pricing model rather than fixed $30/$50/$100 tiers. Worth a quick check with them before locking the design.

Attributes and levels (recommended design)

Attribute	**Levels**	**Notes**
Price	$30 / $50 / $100	As specified
Speed control	On/off only (single speed) / 3-speed dial / 5-speed dial	Converts "speeds 1-5" into an ordinal attribute rather than a binary button
Pulse button	Present / Not present	Binary
Ice crush button	Present / Not present	Binary
Blend & liquefy presets	None / Blend preset only / Blend + Liquefy presets	Ordinal, avoids the illogical "liquefy without blend" combination

Generic on/off is treated as a baseline every product has, not a testable attribute, since no respondent will pick a blender that can't be turned on. It's implied, not manipulated.

Total design space: 3 × 3 × 2 × 2 × 3 = 108 combinations. A fractional factorial design (built in whatever conjoint software you use) will select an efficient, balanced subset for the actual choice tasks rather than showing respondents all 108.

Choice task design

- 3 product concepts per task, plus a "None of these" option
- 12 choice tasks per respondent
- Attribute levels randomized and balanced across respondents to avoid order effects
- "None" option is important here: it lets the simulator estimate whether a given price/feature combo would actually pull someone into the category at all, not just which of three forced options they'd pick

Example choice task (respondent view)

	Blender A	**Blender B**	**Blender C**
Price	$50	$30	$100
Speed control	3-speed dial	On/off only	5-speed dial

	Blender A	**Blender B**	**Blender C**
Pulse	Yes	No	Yes
Ice crush	No	No	Yes
Blend/Liquefy presets	Blend only	None	Blend + Liquefy

Respondent picks A, B, C, or "None of these." Repeat with new randomized combinations for 12 rounds.

Target respondents / screening

Screen for people who have purchased or are likely to purchase a kitchen blender in the next 12 months, and exclude commercial/food-service buyers unless the customer is targeting that segment too. If the customer cares about specific sub-audiences (health/smoothie-focused buyers vs. general kitchen use, first-time buyers vs. replacement buyers), those should be quota'd or captured for subgroup analysis. I don't have detail from you on who the target buyer is beyond "kitchen blender buyers," so this section needs the customer's input before fielding.

Sample size

Using the standard rule of thumb for CBC ($n \geq 500 \times c / (t \times a)$, where c = levels in the largest attribute, t = tasks, a = concepts per task excluding none): with c=3, t=12, a=3, the statistical floor is about 42 respondents for stable individual-level utilities via hierarchical Bayes estimation. That's a floor, not a real target. Commercial CBC studies typically run 200 to 400+ total completes so the market simulator holds up and so you have enough data if the customer wants to cut results by subgroup. I don't know what subgroup cuts (if any) the customer wants, so I can't give you a final number, that's a conversation to have with them before you size the field.

Analysis plan

1. Hierarchical Bayes (HB) estimation to generate individual-level part-worth utilities for every attribute level
2. Importance scores per attribute (how much of the total decision each attribute accounts for, e.g., "price drives 45% of preference, speed control drives 20%")
3. Market simulator (share of preference) to test specific hypothetical product lineups against each other, including the "none" share
4. Willingness-to-pay estimates for each feature level, derived from trading off price utility against feature utility
5. Optimal-product search across the simulator to identify the price/feature combination(s) with the highest preference share, and whether a single SKU or a good/better/best lineup performs better overall

What this gives the customer

A defensible answer to "what should we build and what should we charge," backed by: attribute importance ranking, per-feature willingness-to-pay, and simulated preference share for any specific product configurations they want to compare (including their current front-runner concepts, if they have any).

Gaps I don't have, and where "I don't know" applies

- I don't know the customer's target respondent count or research budget, which will determine the real sample size, not just the statistical floor above.
- I don't know whether this is a US-only audience or multi-market, which affects both price framing and fielding.
- I don't know the customer's actual manufacturing/margin cost per feature. Conjoint tells you what buyers will pay for a feature, not what it costs to include, and both numbers are needed to pick a final answer.
- I don't know if there are competitor products or price points the customer wants benchmarked in the simulator. If so, those should be added as reference concepts.
- I don't know if the customer wants a single winning SKU or a tiered lineup (e.g., three separate blenders across the three price points). That changes how you'd read the simulator output, and it's worth confirming with them up front.