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Pricing Topology: Interpreting the Van Westendorp Price Sensitivity Meter Through Category Pricing Conventions

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PRICING TOPOLOGY: INTERPRETING THE VAN WESTENDORP PRICE SENSITIVITY METER THROUGH CATEGORY PRICING CONVENTIONS

ABSTRACT

Firms frequently develop products that offer meaningful customer value yet fail to generate corresponding pricing power. This paper conceptualizes that disconnect as the Value Translation Gap and introduces Pricing Topology, a theoretical framework explaining how prevailing category conventions influence which prices are perceived as legitimate. Rather than proposing a new estimation procedure, the framework extends the Van Westendorp PSM through three sequential stages: Value, Legitimacy, and Execution operationalized with four diagnostic indicators. Empirical illustrations demonstrate how identical PSM outputs yield fundamentally different pricing outcomes across category conventions, providing managers a framework for diagnosing pricing power rather than estimating acceptable prices.

Keywords: Price Sensitivity Meter; Revenue Management; Pricing Strategy; Pricing Power; Value-Based Pricing; Willingness-to-Pay

PRICING TOPOLOGY: INTERPRETING THE VAN WESTENDORP PRICE SENSITIVITY METER THROUGH CATEGORY PRICING CONVENTIONS

1. INTRODUCTION

Pricing power is a primary driver of firm profitability and competitive advantage (Priem, 2007; Hinterhuber & Liozu, 2012). Competitive strategy therefore encourages firms to focus on differentiation and the valuable, rare, and inimitable resources that create customer value (Porter, 1980, 1985; Barney, 1991). Yet firms frequently develop products that consumers perceive as valuable without realizing corresponding pricing power. The critical question is not simply whether firms create customer value, but whether category conventions permit that value to be translated into legitimate, durable price premiums. Contemporary pricing methods provide increasingly sophisticated estimates of willingness-to-pay, reservation prices, and acceptable pricing ranges (Monroe, 2003; Hinterhuber, 2004; Hinterhuber & Liozu, 2012; Ingenbleek et al., 2013). However, they provide much less insight into a different question: when does perceived customer value translate into durable pricing power? We describe this disconnect as the Value Translation Gap (VTG). The managerial importance of this problem is reflected in pricing practice. Simon-Kucher & Partners (2016) reported that 82% of firms experienced significant pricing pressure, nearly half competed in active price wars, and only 30% successfully increased prices. These findings suggest that many organizations struggle not because they fail to create customer value, but because they lack a way to evaluate whether category conventions support sustained price premiums. Revenue-management models similarly assume that the relevant competitive environment has already been identified before prices are optimized (Cross, 1997; Talluri & Van Ryzin, 2004; Phillips, 2005). Yet category specification itself is rarely treated as an empirical question.

This distinction exposes an important limitation in existing pricing methods. Although firms routinely measure consumers' willingness to pay, they have fewer tools for understanding whether those evaluations can realistically become durable pricing power. The Van Westendorp Price Sensitivity Meter (PSM) is particularly relevant because it remains one of the most widely used methods for estimating acceptable prices from consumers' perceptions of prices that are “Too Cheap,” “Cheap,” “Expensive,” and “Too Expensive” (Van Westendorp, 1976; Lyon, 2002; Lipovetsky et al., 2011; Wirth & Dibb, 2019). These measures are used to derive four pricing coordinates: the Point of Marginal Cheapness (PMC), Indifference Price Point (IPP), Optimal Price Point (OPP), and Point of Marginal Expensiveness (PME) which provide a robust description of acceptable prices for individual products. They do not, however, explain why comparable willingness-to-pay sometimes produces durable pricing power and sometimes does not.

The missing theoretical link is provided by Becker's (1982) theory of conventions. Markets coordinate expectations through shared conventions; this paper argues that product categories perform the same function for pricing by defining the boundaries within which price premiums are perceived as legitimate. Accordingly, it defines Pricing Topology as the empirical characterization of these category-level pricing conventions. Rather than introducing new pricing coordinates, the proposed framework interprets conventional PSM outputs through three structural dimensions:

- Value: *Has meaningful pricing value been created?*
- Legitimacy: *Where are the category's pricing boundaries, and how strongly are they enforced?*
- Execution: *Is premium price acceptance sufficiently broad to support commercial realization?*

Like the traditional PSM these dimensions are operationalized using four category-level diagnostics: the Value Translation Gap (VTG), Legitimacy Pressure Index (LPI), Ceiling Sharpness (CS), and Tail-to-Mass Ratio (T2M). Together they characterize whether perceived customer value is consistent with durable pricing power.

Finally, two exploratory empirical illustrations in Vizzy hard seltzer and La Mer skincare demonstrate how alternative category specifications can produce different pricing diagnoses from the same underlying consumer evaluations. The broader contribution is methodological: by interpreting conventional PSM outputs at the category level, Pricing Topology provides a framework for evaluating the conditions under which perceived customer value is consistent with durable pricing power.

2. THE VAN WESTENDORP PRICE SENSITIVITY METER: FROM PRICING COORDINATES TO PRICING TOPOLOGY

Willingness-to-pay (WTP) is central to pricing research because it has been robustly demonstrated to reflect consumers' valuation of a product and informs value-based pricing decisions (Breidert et al., 2006; Kalish & Nelson, 1991). Among the available approaches, the Van Westendorp Price Sensitivity Meter (PSM) remains widely used because of its simplicity, intuitive interpretation, and managerial relevance (Lyon, 2002; Lipovetsky et al., 2011; Wirth & Dibb, 2019).

Table 1. about here

These coordinates have been useful to describe expectations about appropriate comparisons, acceptable prices, and legitimate differentiation (Kahneman, Knetsch, & Thaler, 1986; Rosa et al., 1999; Loken et al., 2008). These conventions stabilize markets by defining the boundaries within which products and prices are evaluated (Navis & Glynn, 2011; Durand & Paolella, 2013). This paper defines Pricing Topology as the empirical characterization of these category-level conditions. The framework organizes them into three structural dimensions and four corresponding diagnostics.

Table 2. about here

The Value Translation Gap (VTG) serves as the initial diagnostic by assessing whether focal-brand price tolerance extends beyond prevailing category conventions. When it does, the Legitimacy Pressure Index (LPI) and Ceiling Sharpness (CS) evaluate the location and strength of the category convention's boundary, while the Tail-to-Mass Ratio (T2M) assesses the breadth of premium price acceptance. Accordingly, the framework proceeds sequentially from perceived pricing value to category legitimacy and commercial execution. Pricing Topology also identifies a boundary condition for revenue management. Although operationalization techniques can improve price realization through inventory control, segmentation, dynamic pricing, and differentiated offers (Ng, 2006; Wang, Wittman, & Fiig, 2023; Jayaram, 2024), they operate within an accepted competitive structure rather than establishing pricing legitimacy beyond it. The fuller revenue-management implications are developed in the Discussion.

3. FROM PRICING COORDINATES TO PRICING TOPOLOGY

Pricing decisions typically extend beyond identifying a single acceptable price. Managers must determine whether perceived customer value is consistent with durable pricing power, how much legitimate pricing headroom remains, how strongly consumers will resist further price increases, and whether premium demand is sufficiently broad to support commercial realization. These questions concern the structural conditions governing value translation rather than the acceptability of a single price. Drawing on Becker's (1982) theory of conventions, we argue that category pricing conventions define the boundaries within which perceived customer value can be translated into legitimate price premiums. Accordingly, the proposed framework characterizes three structural dimensions of Pricing Topology: Value, Legitimacy, and Execution using four complementary diagnostics derived from conventional PSM outputs.

The framework focuses primarily on the “Too Expensive” distribution because the upper perceptual pricing boundary is where value translation becomes strategically consequential. The proposed diagnostics are intentionally diagnostic rather than predictive. They characterize the structure of the pricing landscape rather than estimate a single optimal price or claim universal decision thresholds.

Structural Dimension 1: Value

The first diagnostic, the Value Translation Gap (VTG), asks whether consumer perceptions of a focal product indicate meaningful pricing value beyond prevailing category conventions. VTG functions as the framework's strategic gatekeeper because questions of category legitimacy, commercial execution, and ultimately revenue-management optimization become relevant only when a product first exhibits pricing value beyond the existing category boundary. The framework therefore proceeds sequentially from perceived pricing value to category legitimacy, to commercial execution.

Operationalization: Value Translation Gap (VTG)

- The topological property associated with Value is peak elevation: the vertical distance between the focal brand’s representative upper price tolerance and the category’s established legitimacy boundary. VTG is calculated as:

$$VTG = Median(TooExpensive_{brand}) - PME_{category}$$

VTG is formulated as a simple difference because it measures the absolute monetary distance expressed by consumers between focal-brand price tolerance and the category's upper legitimacy boundary. The median "Too Expensive" response captures representative consumer price tolerance, while aggregate category-level PME defines the conventional upper boundary of acceptable pricing. Their difference therefore provides an estimate of the perceived pricing value extending beyond prevailing category conventions.

The category median is used rather than the arithmetic mean because "Too Expensive" responses are often positively skewed by a relatively small number of highly enthusiastic consumers. The median provides a more robust estimate of central price tolerance while preserving those upper-tail responses for the separate analysis of Execution. Alternative formulations using the mean, focal-brand PME, OPP, or observed MSRP were considered less appropriate. The mean is more sensitive to extreme responses; focal-brand PME would compare two product-level estimates rather than identify value extending beyond the category; OPP represents a balancing point rather than an upper legitimacy boundary; and MSRP reflects the firm's pricing decision rather than consumers' perceived value.

Under theoretically expected conditions, VTG should behave as follows:

$VTG > 0$: the focal brand exhibits perceived pricing value above the category boundary.
$VTG \approx 0$: focal-brand price tolerance aligns with prevailing category expectations.
$VTG < 0$: the focal brand does not reach the category's established upper pricing boundary.

A positive VTG is therefore evidence consistent with unrealized or potentially translatable pricing value, not proof that the value can necessarily be captured. Legitimacy and execution must still be evaluated.

Structural Dimension 2: Legitimacy

The existence of a positive Value Translation Gap does not by itself establish pricing power. The second stage of analysis is oftentimes the critical decision point. Category conventions determine whether perceived customer value can be translated into legitimate market prices. Legitimacy has two distinct structural properties: boundary location—i.e., where is the boundary? and boundary strength—i.e., how strongly is the boundary enforced? The Legitimacy Pressure Index identifies how close the focal product's current price is to the category boundary, while Ceiling Sharpness characterizes how abruptly consumer resistance increases around that boundary.

Operationalization 1: Legitimacy Pressure Index (LPI)

- The topological property associated with the Legitimacy Pressure Index is cliff proximity. LPI measures the focal brand's current market price relative to the category's upper legitimacy boundary:

$$LPI = \frac{MSRP_{brand}}{PME_{category}}$$

For this indicator a ratio is appropriate because legitimacy depends on relative proximity to the category boundary rather than absolute dollar differences. MSRP represents the firm's realized market position, while category PME provides the legitimacy benchmark. Expressing their relationship as a ratio normalizes comparisons across categories with different price levels while preserving an intuitive interpretation of remaining pricing headroom.

MSRP is used in the numerator because LPI evaluates the firm's realized market position rather than perceptual consumer valuation. The category PME is used in the denominator because it represents the upper boundary against which the legitimacy of that observed price is judged. Alternative formulations based on an absolute difference, such as $PME - MSRP$, were considered less suitable because they are less comparable across categories with different price scales. Ratios based on OPP or IPP were also rejected because those coordinates represent intersection or central points within the acceptable range rather than its upper legitimacy boundary. A ratio using the focal brand's median "Too Expensive" response would similarly measure perceived value rather than the legitimacy of the firm's current price.

Under theoretically expected conditions:

$LPI < 1$: MSRP remains below the estimated category legitimacy boundary.
$LPI \approx 1$: MSRP is positioned near the category cliff edge.
$LPI > 1$: MSRP exceeds the estimated category legitimacy boundary.

LPI should increase as a firm raises price while category PME remains fixed. It should decrease when the relevant category recognizes higher prices as legitimate. Thus, LPI identifies whether pricing headroom appears available, nearly exhausted, or already exceeded.

Operationalization 2: Ceiling Sharpness (CS)

- The second topological property of Legitimacy is cliff steepness. Two categories may possess similar PMEs yet differ substantially in how abruptly consumers reject prices around those boundaries. Ceiling Sharpness (CS) captures the localized change in the cumulative "Too Expensive" distribution immediately surrounding the category Point of Marginal Expensiveness (PME):

$$CS = F_{TE}(PME + \Delta) - F_{TE}(PME - \Delta)$$

where $F_{TE}(p)$represents the cumulative proportion of respondents judging price $p$to be "Too Expensive," and Δ defines a fixed, symmetric interval on either side of the category PME. Centering the interval on PME provides a localized and unbiased estimate of how abruptly consumer resistance emerges as prices cross the category's upper legitimacy boundary.
This formulation is appropriate because CS is intended to measure the localized change in consumer resistance surrounding the category legitimacy boundary, rather than the overall shape of the willingness-to-pay distribution. The interval is centered on PME because the strategic question concerns how strongly the market enforces its upper acceptable pricing boundary. A large shift in "Too Expensive" perceptions across this interval indicates that many consumers transition rapidly from price acceptance to price rejection as valuations move beyond the category ceiling.

To preserve comparability across categories with substantially different price levels, the interval Δ should be specified as a predetermined proportion of the category PME rather than as a fixed monetary amount. The interval should be established a priori and held constant across all analyses. Although the magnitude of CS may vary with the selected category interval, the substantive interpretation should remain directionally consistent across reasonable interval widths. Alternative formulations including estimating the overall slope of the "Too Expensive" distribution or using broader measures of price dispersion were considered but rejected because they characterize the distribution as a whole rather than the localized enforcement of the upper category legitimacy boundary. This localized difference formulation instead provides a transparent, reproducible measure of how strongly category conventions respond as prices cross the estimated pricing ceiling while remaining fully compatible with conventional PSM outputs.

Under theoretically expected conditions:

Higher CS values indicate that relatively small price increases around the category PME produce large increases in "Too Expensive" judgments, reflecting a sharply enforced legitimacy boundary.

Lower CS values indicate that consumer resistance develops more gradually, suggesting a more forgiving pricing environment.

Categories may therefore exhibit similar PMEs but substantially different CS values, demonstrating that boundary location and boundary strength are empirically distinct structural properties of pricing legitimacy. Accordingly, CS should be interpreted comparatively across categories until normative benchmark ranges are established through future research.

Structural Dimension 3: Execution

Even when meaningful perceived pricing value exists and category conventions permit premium pricing, firms must determine whether premium price tolerance extends across a sufficiently broad portion of the market. Execution concerns the breadth of premium acceptance rather than its mere existence.

Operationalization: Tail-to-Mass Ratio (T2M)

The topological property associated with Execution is plateau width. The Tail-to-Mass Ratio (T2M) derives its name by comparing the additional price tolerance observed in the upper tail of the focal-brand distribution (i.e., the "Tail") with the representative pricing value captured by the distribution's central mass (i.e., "Mass"), both measured relative to the category PME. Larger values indicate that premium price acceptance extends broadly beyond the representative consumer, while smaller values suggest enthusiasm concentrated within a relatively narrow niche segment.

$$T2M = \frac{P75(TooExpensive_{brand}) - PME_{category}}{Median(TooExpensive_{brand}) - PME_{category}}$$

The ratio formulation is appropriate because T2M evaluates the distribution of premium price acceptance relative to the focal brand's overall representative pricing value. The denominator is equivalent to the Value Translation Gap and captures the representative consumer's pricing value above the category PME. The numerator substitutes the 75th percentile "Too Expensive"

response, measuring the pricing value exhibited by consumers with stronger premium price tolerance. This provides a strategically meaningful reference point because it captures a substantially large share of consumers exhibiting above-average premium price tolerance without relying on a small number of extreme observations, making it appropriate for evaluating the scalability of premium pricing (Hinterhuber & Liozu, 2012). The resulting ratio indicates whether premium acceptance remains broadly distributed beyond the representative consumer or is concentrated within a relatively small upper-tail segment.

Methodologically, the 75th percentile was selected because it captures the upper portion of the willingness-to-pay distribution without relying on extreme observations. Higher percentiles become increasingly sensitive to small enthusiast segments, while lower percentiles understate meaningful premium acceptance. Relative to the median VTG, P75 therefore provides a practical indicator of whether premium price tolerance extends beyond representative consumers.

Under theoretically expected conditions, assuming $VTG > 0$ (i.e., the Value stage has been satisfied):

$T2M \approx 1.00$: the upper quartile extends above the category boundary by approximately the same proportional distance represented by the median VTG.

$T2M > 1.00$: upper-segment price tolerance extends materially beyond the median value gap, suggesting a broader or deeper premium pricing plateau.

Values closer to 1.00 indicate less additional upper-tail extension beyond the representative focal-brand advantage.

Very high values should be interpreted cautiously because they may reflect a long upper tail rather than broad mass-market acceptance.

T2M is therefore best interpreted jointly with VTG and the underlying distribution. It diagnoses a positive value gap supported by broader premium tolerance from one driven primarily by a narrower upper-tail niche segment.

Table 3. about here

Collectively, these diagnostics characterize complementary properties of category pricing topology, providing a structured basis for the empirical illustrations that follow.

4. INTERPRETING PRICING COORDINATES THROUGH PRICING TOPOLOGY

Figure 1 summarizes the conceptual contribution of the proposed framework. Traditional applications of the Price Sensitivity Meter estimate pricing coordinates for an individual product. Pricing Topology retains those familiar outputs but uses them to characterize the category conditions governing value translation. Rather than ending with an acceptable price recommendation, the framework evaluates whether observed pricing limitations are most consistent with insufficient perceived pricing value, restrictive category legitimacy, or limited commercial execution. The following empirical illustrations demonstrate how these diagnostics produce different pricing diagnoses across alternative competitive categories.

Figure 1. about here
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5. EMPIRICAL DEMONSTRATION OF CATEGORY PRICING TOPOLOGY

The empirical objective of this study is exploratory. Rather than evaluating predictive accuracy, the analyses can examine whether conventional PSM data consistently characterize category pricing conventions. The objective is methodological: to determine whether the proposed Pricing Topology diagnostics produce theoretically coherent and interpretable differences across alternative competitive categories, thereby providing an empirical foundation for subsequent validation.

5.1 Data and Analytical Procedure

The framework was applied to two consumer product categories exhibiting fundamentally different category pricing structures: hard seltzer and skincare. Following a theoretical replication logic (Yin, 2018), the categories were selected to provide contrasting empirical settings. Hard seltzer is characterized by compressed price ranges and intense commoditization pressures, whereas skincare spans a broad continuum from mass-market to luxury positioning. Together, these contrasting contexts provide an appropriate test of whether Pricing Topology identifies differences in category pricing conventions across distinct competitive structures.

In a first step, conventional Van Westendorp Price Sensitivity Meter questionnaires were administered to a convenience sample of 112 respondents who self-reported familiarity with both product categories. The sample was relatively young (mean age = 24 years) and 60% female, demographics broadly consistent with important purchasing segments in both hard seltzer and skincare. Although not intended to be population representative, the sample provides an appropriate basis for the framework's proof-of-concept methodological demonstration. Respondents evaluated each product using the standard four PSM questions identifying prices perceived as “Too Cheap,” “Cheap,” “Expensive,” and “Too Expensive” (Van Westendorp, 1976).

Table 4. about here

Category-level pricing coordinates were estimated by pooling conventional PSM responses across all brands within each competitive category (please see Appendix A). Conventional category PMC, IPP, OPP, and PME coordinates were then calculated using the standard Van Westendorp intersection procedure. Accordingly, category pricing coordinates represent the collective pricing convention of the specified competitive set rather than an arithmetic average of individual brand estimates. Because the objective is methodological demonstration rather than statistical inference, pooled brand evaluations are interpreted as repeated observations of category pricing structure rather than independent respondent samples. This permits

conventional pricing coordinates to be estimated simultaneously at the brand and category levels without modifying the underlying PSM procedure. To illustrate the framework's central proposition, La Mer was evaluated under two theoretically plausible competitive specifications: first within a broad facial moisturizer category and then within a second prestige skincare category set. If Pricing Topology reflects category conventions rather than product characteristics alone, the same product should exhibit different diagnostic profiles under different category definitions. Importantly, the conventional PSM estimation procedure remains unchanged. The methodological contribution begins only after PMC, IPP, OPP, and PME have been estimated, deriving category-level diagnostics from familiar pricing coordinates rather than introducing alternative estimation procedures.

All analyses were implemented using a standardized Python workflow incorporating the pandas library (McKinney, 2010). The workflow automated conventional PSM estimation, calculation of the four Pricing Topology diagnostics, and generation of comparative category summaries using identical computational procedures across all analyses. For all analyses, Δ was specified as ±10% of the estimated category PME and held constant across categories, ensuring that observed differences reflected category pricing conventions rather than computational implementation.

To evaluate the stability of the proposed diagnostics, several sensitivity analyses were conducted. The substantive interpretation of the empirical results remained unchanged when (1) the median was replaced by the arithmetic mean in VTG and T2M, (2) the 75th percentile was replaced with the 70th and 80th percentiles in T2M, (3) the Ceiling Sharpness interval was specified as ±5%, ±10%, and ±15% of category PME, (4) one competing brand was removed from each competitive set, and (5) theoretically plausible alternative category specifications were examined. Although the numerical values of individual diagnostics changed modestly, the overall pricing topology and resulting managerial interpretations remained functionally consistent. These findings provide initial evidence that the proposed framework is not dependent on a single operational specification while leaving broader validation to future research.

5.2 Vizzy Hard Seltzer: When Consumer Value Does Not Become Pricing Power

Vizzy illustrates the central puzzle motivating this paper. Despite differentiated positioning based on distinctive flavors, added vitamin C, and wellness-oriented branding, the brand has not been able to translate those advantages into durable premium pricing within the hard seltzer category. The question is therefore not whether consumers perceive meaningful pricing value, but whether prevailing category conventions permit that value to become durable pricing power.

Figure 2 compares Vizzy's conventional Price Sensitivity Meter responses with the aggregate pricing topology of the hard seltzer category. Across the competitive set, observed retail prices range from approximately $1.09 to $3.49, with Vizzy priced at $3.09 (Specifically: Natural Light Seltzer, $1.09; White Claw, $2.19; Truly, $2.29; Corona Hard Seltzer, $2.59; Vizzy, $3.09; High Noon, $3.49). The category PME is estimated at $2.94, indicating a relatively constrained upper pricing boundary. At first glance, Vizzy appears to have substantial untapped pricing power. Its median “Too Expensive” response ($4.50) lies well above both its MSRP and the category PME. Yet, importantly for this paper's argument, that apparent opportunity exists beyond the category's legitimacy boundary, where consumers may recognize value, but category conventions do not

support durable premium pricing. Within the crowded hard seltzer category, high product substitutability and intense competitive rivalry reinforce those conventions, making sustained price premiums difficult to establish. The central question is therefore whether perceived pricing value can actually be translated into pricing power.

Figure 2. about here

Viewed through a conventional PSM lens, Vizzy appears to possess substantial untapped pricing power because consumers report price tolerance well above both its current MSRP and the estimated category PME. Pricing Topology tells a different story. Although VTG indicates meaningful pricing value beyond prevailing category conventions, LPI and CS reveal that this apparent opportunity lies beyond a steep legitimacy boundary trapped within conventions of a highly substitutable, intensely competitive category. T2M further indicates that premium price acceptance is broadly distributed rather than confined to a small group of enthusiasts. Collectively, the diagnostics suggest that the principal constraint is neither perceived pricing value nor market breadth, but the category's limited capacity to legitimize durable price premiums.

Table 5. about here

Structural Dimension 1: Value
The first question is whether meaningful pricing value exists. The Value Translation Gap (VTG = +1.56) indicates substantial pricing value extending beyond prevailing category conventions. If consumer value alone determined pricing power, Vizzy would appear well positioned for further premiumization.

Structural Dimension 2: Legitimacy
The second question is whether category conventions permit that pricing value to become durable pricing power. The Legitimacy Pressure Index (LPI = 0.78) indicates that Vizzy has already realized approximately 78% of the category's available pricing headroom, leaving limited scope for additional premiumization. Ceiling Sharpness (CS = 0.30) further indicates that consumer resistance rises rapidly as prices cross the category PME, revealing a steeply enforced legitimacy boundary. Together, these diagnostics suggest that the principal constraint is not product differentiation but the category's limited capacity to support additional price premiums.

Structural Dimension 3: Execution
Finally, the Tail-to-Mass Ratio (T2M = 1.21) indicates that premium price acceptance extends broadly across consumers rather than being confined to a small group of enthusiasts. Execution therefore does not appear to be the principal constraint. Instead, Vizzy exhibits trapped pricing power: consumers recognize meaningful pricing value, but prevailing category conventions prevent that value from becoming durable pricing power.

Table 6. about here

The Vizzy illustration demonstrates that revenue-management tools cannot compensate for weak category legitimacy. While differentiated offers and price fences may improve price realization within specific segments (Ng, 2006), Vizzy's constrained LPI indicates that optimization alone cannot create durable premium pricing. The problem is not optimizing price—it is that the category does not legitimize the desired price.

5.3 La Mer Prestige Skincare: When Category Definition Determines Pricing Power

Whereas the Vizzy illustration examines why perceived pricing value may fail to become pricing power, La Mer addresses a different question: Where does pricing legitimacy come from? If legitimacy emerges from category conventions rather than product characteristics alone, then the same focal product should produce different pricing diagnoses under alternative competitive specifications.

La Mer provides a demanding test of this proposition. Introduced in the 1960s and acquired by Estée Lauder in 1995, the brand has sustained exceptional price premiums for decades, with its flagship moisturizer retailing at approximately $180 per 1.7-ounce jar. Its persistent premium positioning makes it a useful context for examining whether pricing legitimacy depends on the product itself or on the category against which it is evaluated.

Figures 3 and 4 apply identical Van Westendorp processes, respondent evaluations, and computational procedures. Only the competitive category changes. The first analysis places La Mer within a broad facial-moisturizer set comprising Cetaphil ($9.99), CeraVe ($16.99), Olay ($29.99), Clinique ($49.50), La Mer ($180.00), and SK-II ($259.00). Under this specification, the category PME is approximately $99.38, placing La Mer well above the estimated upper pricing boundary. Yet respondents report substantial price tolerance, with a median “Too Expensive” response of approximately $213.59, producing a VTG of +114.21. These PSM responses indicate meaningful pricing value beyond the estimated category boundary, while an LPI of 1.81 suggests that La Mer's MSRP lies far outside the pricing structure implied by this competitive set. Viewed conventionally, the analysis would conclude that La Mer's premium pricing is fundamentally unsustainable. Such a diagnosis is difficult to reconcile with the brand's decades-long ability to sustain extraordinary price premiums and enduring commercial success. The more plausible explanation is not that the product lacks pricing power, but that the broad facial-moisturizer category is the wrong competitive frame for interpreting the same consumer evaluations.

Figure 3. about here

The second analysis evaluates La Mer within a prestige-skincare set comprising Clinique ($49.50), Estée Lauder ($95.00), Lancôme ($140.00), La Mer ($180.00), SK-II ($259.00),

Augustinus Bader ($280.00), and Dr. Barbara Sturm ($300.00). Under this specification, the estimated category PME rises to approximately $182.15, placing La Mer almost exactly at the category boundary. The focal product and its consumer evaluations remain unchanged; only the competitive reference frame differs.

Importantly, this comparison is far more than a conventional sensitivity analysis. It demonstrates the central contribution of Pricing Topology: category definition fundamentally shapes the strategic interpretation of PSM outputs. Under the prestige skincare specification, La Mer's VTG remains positive (+31.44), while LPI boundary proximity falls dramatically from 1.81 to 0.99. The evidence of meaningful pricing value remains unchanged, yet the strategic diagnosis shifts from apparent pricing failure to legitimate premium pricing solely because the competitive category has been redefined. Category definition therefore becomes a substantive component of pricing diagnosis rather than a background assumption, because it determines whether identical PSM evidence is interpreted as pricing failure or legitimate pricing power.

Figure 4. about here

Table 7. about here

Structural Dimension 1: Value

Consumer evaluations indicate meaningful pricing value under both category specifications. VTG declines from +114.21 in the broad category to +31.44 in prestige skincare because the category benchmark rises substantially, but it remains positive in both cases. The change in diagnosis therefore cannot be attributed to different focal-product evaluations. It arises from the category boundary against which those evaluations are interpreted.

Structural Dimension 2: Legitimacy

The legitimacy diagnosis changes sharply. Re-specifying the competitive category increases PME from $99.38 to approximately $182.15 and reduces LPI from 1.81 to 0.99. Under the broad specification, La Mer appears to exceed the category's accepted pricing boundary. Under the prestige specification, its observed price aligns closely with that boundary. Neither the product nor the stated-preference responses change. The result demonstrates that pricing legitimacy is fundamentally comparative rather than absolute. Consumers do not evaluate prices in isolation; they evaluate them relative to the competitive alternatives that define the category. Pricing legitimacy therefore emerges not solely from product attributes, but from the competitive conventions within which those attributes are interpreted.

Structural Dimension 3: Execution

Finally, the T2M increases from 1.13 to 1.48, indicating that upper-segment price tolerance extends beyond the representative focal-brand value gap under both specifications and more

strongly within the prestige category. Execution therefore does not appear to be the principal constraint. The critical difference lies in legitimacy: the prestige category provides a pricing structure within which La Mer's observed price is interpreted as conventional rather than anomalous. Taken together, the diagnostics characterize La Mer as a case of misclassified pricing power under the broad category and legitimate premium pricing under the prestige specification. The first diagnosis reflects an inappropriate competitive reference frame; the second aligns the brand's observed price with the conventions of the market in which it competes.

Table 8. about here

5.4 What the Empirical Demonstrations Reveal

The Vizzy and La Mer illustrations demonstrate complementary uses of Pricing Topology. Vizzy shows that observed PSM responses may indicate meaningful pricing value and broad premium acceptance even when category conventions constrain further price realization. La Mer shows that the legitimacy diagnosis can change when the same product is evaluated against alternative, theoretically plausible competitive categories. Together, the illustrations support the proposition that focal-product evaluations alone are insufficient to characterize pricing opportunity. Category specification determines the conventions against which those evaluations are interpreted. Pricing Topology makes that assumption explicit by distinguishing perceived pricing value, category legitimacy, and execution breadth.

Table 9. about here
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6. DISCUSSION

The Price Sensitivity Meter (Van Westendorp, 1976) remains one of the most widely used approaches for estimating acceptable prices because it provides an intuitive and empirically grounded representation of consumer price evaluations. This paper argues that those estimates also contain information about the competitive category within which they are interpreted. Rather than replacing conventional PSM, Pricing Topology extends its interpretation from product-level price estimation to category-level diagnosis. The empirical illustrations demonstrate that identical consumer evaluations can produce markedly different pricing diagnoses depending on the competitive conventions against which they are evaluated.
More broadly, the proposed framework reframes competitive category specification as an empirical question rather than solely a managerial assumption. Candidate categories should continue to be defined using independent competitive theory and market knowledge. Pricing Topology then provides a structured way to evaluate the implications of alternative, theoretically plausible category specifications. Managers already make subjective category judgments when defining competitors, and consumers clearly make comparable judgments when evaluating

prices. Pricing Topology does not replace those judgments; it provides an empirical basis for evaluating their pricing consequences. In doing so, it shifts attention from asking only what consumers are willing to pay to also asking whether the surrounding category structure is consistent with realizing those prices in the marketplace.

Table 10. about here

For managers, the framework provides a structured sequence for diagnosing pricing problems before attempting to solve them. Weak VTG suggests improving the value proposition rather than increasing price. Strong VTG combined with restrictive legitimacy indicates that repositioning, reframing the competitive category, or redesigning the offering is likely to be more effective than further price optimization. When legitimacy is established but execution is limited, managers should prioritize segmentation and premium targeting. Only when value, legitimacy, and execution align does broad premiumization become a strategically appropriate objective.

For revenue management scholars and practitioners, Pricing Topology identifies an important boundary condition for optimization. Revenue-management techniques are highly effective at improving price realization through inventory management, segmentation, dynamic pricing, and differentiated offers (Wang, Wittman, & Fiig, 2023; Jayaram, 2024). Those tools, however, operate within an accepted competitive structure. Pricing Topology addresses the prior strategic question of whether that structure supports the intended price position. In this sense, the framework complements rather than competes with revenue management: optimization can improve price realization within legitimate category boundaries, but it cannot by itself establish pricing legitimacy beyond them.

Finally, because the framework is intentionally exploratory, several directions remain for future research. Most importantly, the proposed diagnostics require validation across additional product categories, competitive structures, and representative samples. Future work should also establish normative benchmark ranges, examine predictive relationships with realized market outcomes, and evaluate the framework's stability under alternative category specifications. Together, these efforts can determine the generalizability and practical applicability of Pricing Topology across pricing contexts.

Data Availability Statement: The consumer survey data supporting the findings of this study are not publicly available because they contain individual-level respondent information. The data are available from the corresponding author upon reasonable request, subject to applicable ethical and institutional requirements.

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Table 1. Conventional Price Sensitivity Meter Outputs

Pricing Coordinate		Traditional Managerial Interpretation
PMC	Point of Marginal Cheapness	Lower acceptable price boundary
IPP	Indifference Price Point	"Cheap" and "Expensive" price intersection
OPP	Optimal Price Point	"Too Cheap" and "Too Expensive" price intersection
PME	Point of Marginal Expensiveness	Upper acceptable price boundary

Table 2. Category-Level Diagnostics for Characterizing Pricing Topology

Structural Dimension	Diagnostic	Topological Property	Strategic Question
Value	VTG	Peak elevation	*Has meaningful pricing value been created?*
Legitimacy	LPI	Cliff proximity	*Where is the pricing boundary?*
Legitimacy	CS	Cliff steepness	*How strongly is the boundary enforced?*
Execution	T2M	Plateau width	*Can pricing value be realized at scale?*

Table 3. Measure-Development Logic for Pricing Topology Diagnostics

Diagnostic	Construct	Numerator/benchmark logic	Expected behavior	Strategic interpretation
VTG	Value; peak elevation	Focal-brand median "Too Expensive" minus category PME. The median represents central brand-level price tolerance; PME represents the category's upper legitimacy boundary.	Positive when focal-brand price tolerance exceeds the category boundary; near zero when aligned; negative when below it.	Indicates whether meaningful perceived pricing value appears to extend beyond prevailing category conventions.
LPI	Legitimacy boundary location; cliff proximity	Brand MSRP divided by category PME. MSRP represents the firm's realized market price; PME represents the relevant category ceiling.	Increases as MSRP approaches or exceeds category PME; falls when more pricing headroom is available.	Indicates how much of the category's legitimate pricing range has already been occupied and whether further increases risk crossing the boundary.
CS	Legitimacy boundary strength; cliff steepness	Change in cumulative "Too Expensive" judgments across a standardized interval centered on category PME.	Higher values indicate abrupt resistance around PME; lower values indicate a gradual transition.	Indicates how strongly the category enforces its upper pricing boundary and how risky marginal price increases may be near the ceiling.
T2M	Execution; plateau width	Distance from category PME to focal-brand P75 divided by distance from category PME to the focal-brand median. P75 represents upper-market tolerance without relying on extreme observations.	Values above 1 indicate additional upper-tail extension beyond the median value gap; values near 1 indicate less incremental extension. Undefined or uninformative when VTG is nonpositive.	Indicates whether premium price tolerance extends beyond representative consumers or is disproportionately dependent on a narrower upper segment.

Figure 1. From Pricing Coordinates to Pricing Topology

Traditional Price Sensitivity Meter	Extended Price Sensitivity Meter
PMC	PMC
IPP	IPP
OPP	OPP
PME	PME
↓	↓
Pricing Coordinates	Pricing Coordinates
↓	↓
Acceptable Price Recommendation	Pricing Topology
	Structural Dimension 1: Value
	VTG → *Has meaningful pricing value been created?*
	↓
	Structural Dimension 2: Legitimacy
	LPI → *Where is the pricing boundary?*
	CS → *How strongly is the boundary enforced?*
	↓
	Structural Dimension 3: Execution
	T2M → *Can pricing value be realized at scale?*
	↓
	Pricing Topology Diagnosis

Table 4. Empirical Study Sample Descriptions

Category	Respondents	Competitive Set	Brand Evaluations
Hard Seltzer	108	Six established hard seltzer brands (including Vizzy)	648
Mainstream Face Cream	112	Six established mass-market face cream brands (including La Mer)	672
Prestige Skincare	112	Six prestige skincare brands (including La Mer)	672

Figure 2. Pricing Topology Diagnosis: Vizzy Hard Seltzer

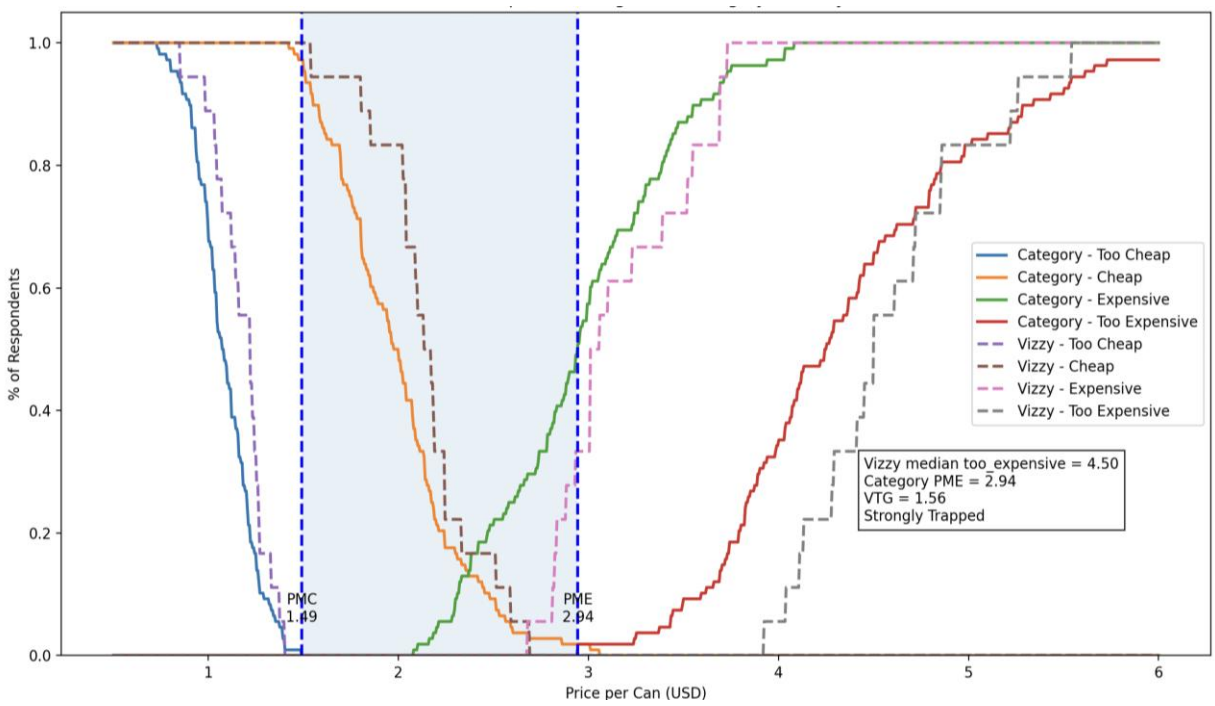


Table 5. Conventional Price Sensitivity Meter Outputs and Category-Level Pricing Diagnosis: Vizzy Hard Seltzer

Conventional Pricing Coordinates

Measure		Interpretation
PMC	$1.49	Lower legitimacy boundary; prices below this level begin to raise quality concerns.
OPP	$2.29	Conventional optimal price point based on the category PSM.
PME	$2.94	Upper legitimacy boundary beyond which prices are increasingly judged "too expensive."

Pricing Topology Diagnostics

Structural Dimension	Diagnostic	Finding	Interpretation
Value	VTG	+1.56	Meaningful pricing value exists.
Legitimacy	LPI	0.78	Limited pricing headroom remains.
Legitimacy	CS	0.30	Pricing boundaries are actively enforced.
Execution	T2M	1.21	Premium demand is broadly distributed.

Table 6. Pricing Topology Diagnosis – Vizzy

Structural Dimension	Assessment
Value	✓ Meaningful pricing value exists.
Legitimacy	✗ Category conventions constrain value translation.
Execution	✓ Premium demand is commercially broad.
Overall Diagnosis	Meaningful customer value exists, but the ridged pricing topology of the hard seltzer category prevents that value from becoming durable pricing power.

Figure 3. Pricing Topology Diagnosis: La Mer (all face creams)

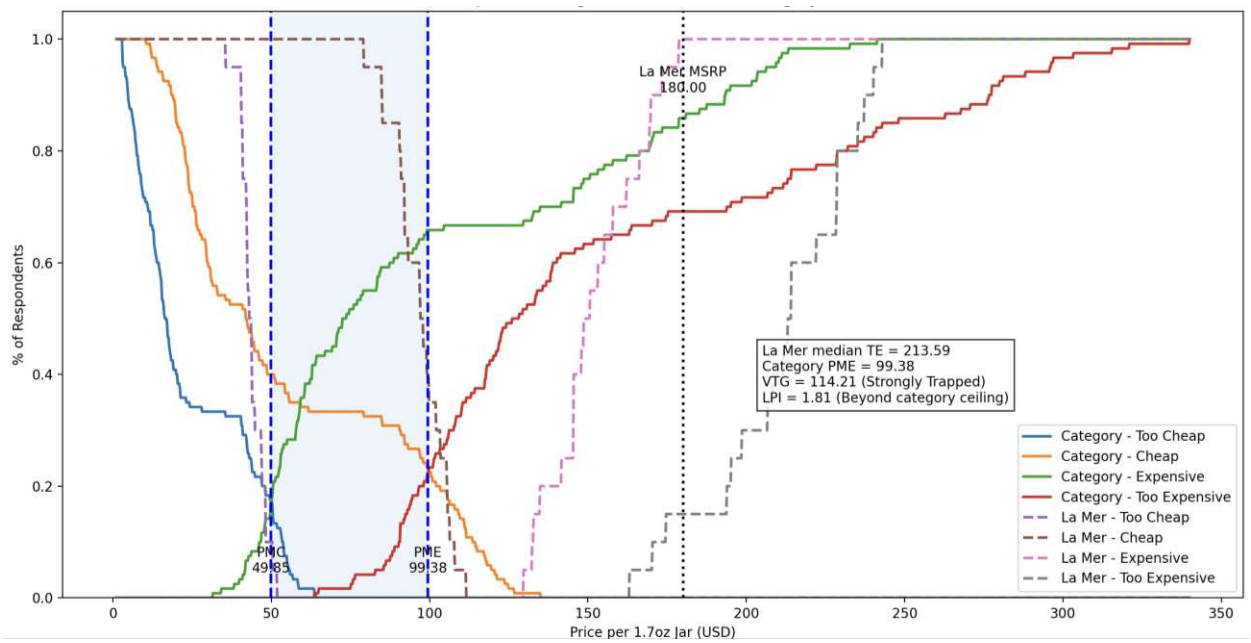


Figure 4. Pricing Topology Diagnosis: La Mer (prestige face creams)

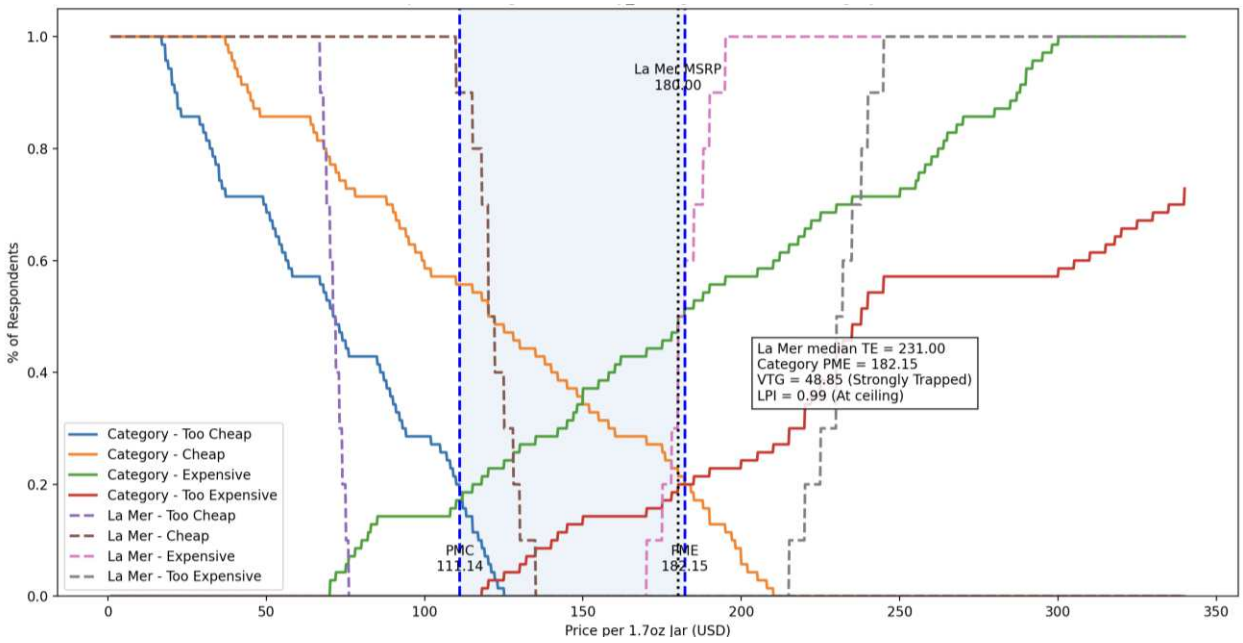


Table 7. Conventional Price Sensitivity Meter Outputs and Category-Level Pricing Diagnosis: La Mer

Conventional Pricing Coordinates

Measure	All Face Creams	Prestige Skincare	Interpretation
PMC	$49.85	$111.05	Lower legitimacy boundary increases substantially
OPP	$59.12	$148.35	Conventional pricing coordinate shifts upward
PME	$99.38	$182.15	Category legitimacy ceiling nearly doubles

Pricing Topology Diagnostics

Structural Dimension	Diagnostic	All Face Creams	Prestige Skincare	Interpretation
Value	VTG	+114.21	+31.44	Meaningful pricing value exists under both category definitions.
Legitimacy	LPI	1.81	0.99	Category specification fundamentally changes the legitimacy diagnosis.
Execution	T2M	1.13	1.48	Premium price tolerance extends further beyond the representative value gap under the prestige specification.

Table 8. Pricing Topology Diagnosis – La. Mer

Structural Dimension	Broad Face Cream Category	Prestige Skincare Category
Value	✓ Consumer evaluations indicate exceptional pricing value.	✓ Consumer evaluations indicate exceptional pricing value.
Legitimacy	✗ Pricing appears to exceed category legitimacy.	✓ Pricing aligns with category legitimacy.
Execution	✓ Premium acceptance appears commercially broad.	✓ Premium acceptance appears commercially broad.
Overall Diagnosis	Apparent pricing failure reflects an inappropriate competitive reference frame.	Category conventions support legitimate premium pricing.

Table 9. Pricing Topology as a Sequential Diagnostic Framework

Structural Dimension	Managerial Question	Vizzy	La Mer (Broad)	La Mer (Prestige)
Value	Has meaningful pricing value been created?	✓	✓	✓
Legitimacy	Will category conventions permit value translation?	Limited	✗	✓
Execution	Can premium pricing be sustained at scale?	✓	✓	✓
Pricing Topology Diagnosis		Trapped Pricing Power	Misclassified Pricing Power	Legitimate Premium Pricing

Table 10. Diagnostic Outcomes and Recommended Managerial Strategic Responses

Topographic Diagnosis	Managerial Strategic Response
Weak VTG	Improve proposition; do not prioritize price increase
Strong VTG, high LPI/steep CS	Reframe category, bundle, reposition, or avoid broad premiumization
Strong VTG, legitimate boundary, low T2M	Segment and target enthusiasts
Strong across all diagnostics	Pursue broader premium pricing

Appendix A. Category-Level Estimation Procedure

The Pricing Topology framework does not modify the conventional Van Westendorp Price Sensitivity Meter estimation procedure. Instead, it extends interpretation by estimating conventional pricing coordinates for an entire competitive category before deriving the proposed diagnostics.

Category-level estimation proceeds as follows:

Step 1. Specify the competitive category: Define the competitive set using independent theoretical and managerial criteria, such as substitution patterns, consumer comparison sets, retail assortment, managerial positioning, or prior category theory. Pricing Topology evaluates the implications of alternative theoretically plausible category specifications; it is not intended to search arbitrarily until a preferred diagnosis emerges.

Step 2. Collect conventional PSM responses: Respondents evaluate every product using the four standard Van Westendorp questions ("Too Cheap," "Cheap," "Expensive," and "Too Expensive").

Step 3. Pool category responses: For each PSM question, responses from all products within the competitive category are combined into a single empirical response distribution. Brand evaluations contribute equally to the category distribution.

Step 4. Estimate conventional category pricing coordinates: Using the pooled cumulative response distributions, estimate the conventional category PMC, IPP, OPP, and PME using the standard Van Westendorp intersection procedure.

Step 5. Calculate Pricing Topology diagnostics: The estimated category PME serves as the common benchmark for calculating VTG, LPI, CS, and T2M for each focal product.

Importantly, the conventional Van Westendorp estimation procedure is applied without modification. The methodological contribution begins only after the standard pricing coordinates (PMC, IPP, OPP, and PME) have been estimated. Pricing Topology therefore changes the interpretation of conventional PSM outputs rather than the procedure used to generate them.

Unless otherwise noted, the primary analyses use a ±10% interval around category PME for the Ceiling Sharpness calculation. Robustness analyses using ±5% and ±15% intervals produced substantively unchanged diagnostic interpretations.

In this way, conventional PSM estimation remains unchanged, while Pricing Topology extends its interpretation from estimating acceptable prices for individual products to characterizing the pricing structure of competitive categories.