

STRATEGIC DEVELOPMENT OF PRICING, BRAND EQUITY, AND PRODUCT QUALITY IN DRIVING CONSUMER PURCHASE DECISIONS: EMPIRICS FROM VIRGIN COCONUT OIL MSMEs IN NORTH MINAHASA, INDONESIA

PENGEMBANGAN STRATEGIS HARGA, EKUITAS MEREK, DAN KUALITAS PRODUK DALAM MENDORONG KEPUTUSAN PEMBELIAN KONSUMEN: EMPIRIS DARI UMKM VIRGIN COCONUT OIL DI MINAHASA UTARA, INDONESIA

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ABSTRACT

Virgin Coconut Oil (VCO) is increasingly valued for its nutritional and therapeutic properties, offering a strategic opportunity for micro, small, and medium enterprises (MSMEs) in North Sulawesi, Indonesia. Yet, limited standardization, weak branding, and inconsistent pricing hinder competitiveness. This study analyzes how pricing strategy, brand equity, and product quality individually and jointly influence consumer purchase decisions for VCO products in North Minahasa Regency. Using a quantitative, associative-causal design, data were collected from 100 consumers selected through purposive sampling. Multiple linear regression reveals that product quality exerts a positive and significant influence on purchase decisions ($p < 0.05$), whereas pricing strategy and brand equity show no significant individual effects. Nevertheless, all three variables together significantly affect purchase behavior ($F = 6.166$, $p = 0.001$), explaining 16.2 percent of total variance. The findings underscore that consumers prioritize functional attributes; purity, clarity, and durability over price or brand cues. Policy-wise, the study recommends value-based pricing, consistent quality control, and long-term brand building to strengthen MSME competitiveness in Indonesia's coconut industry.

Keywords: Virgin Coconut Oil, pricing strategy, brand equity, product quality.

ABSTRAK

Virgin Coconut Oil (VCO) semakin dihargai karena sifat nutrisi dan terapeutiknya, sehingga memberikan peluang strategis bagi usaha mikro, kecil, dan menengah (UMKM) di Sulawesi Utara, Indonesia. Namun, keterbatasan standardisasi, lemahnya branding, dan penetapan harga yang tidak konsisten menghambat daya saing. Penelitian ini menganalisis bagaimana strategi harga, ekuitas merek, dan kualitas produk secara individual maupun bersama-sama mempengaruhi keputusan pembelian konsumen terhadap produk VCO di Kabupaten Minahasa Utara. Menggunakan desain kuantitatif asosiatif-kausal, data dikumpulkan dari 100 konsumen yang dipilih melalui purposive sampling. Analisis regresi linear berganda menunjukkan bahwa kualitas produk memberikan pengaruh positif dan signifikan terhadap keputusan pembelian ($p < 0,05$), sedangkan strategi harga dan ekuitas merek tidak menunjukkan pengaruh individu yang signifikan. Meskipun demikian, ketiga variabel secara bersama-sama berpengaruh signifikan terhadap perilaku pembelian ($F = 6,166$, $p = 0,001$), dengan kontribusi penjelasan sebesar 16,2 persen terhadap total varians. Temuan ini menegaskan bahwa konsumen memprioritaskan atribut fungsional; kemurnian, kejernihan, dan daya tahan, dibandingkan isyarat harga atau merek. Secara kebijakan, penelitian ini merekomendasikan penetapan harga berbasis nilai, pengendalian kualitas yang konsisten, dan pembangunan merek jangka panjang untuk memperkuat daya saing UMKM dalam industri kelapa Indonesia.

Kata kunci: Virgin Coconut Oil, strategi harga, ekuitas merek, kualitas produk.

1. INTRODUCTION

Indonesia's coconut (*Cocos nucifera L.*) sector remains one of the country's most valuable agricultural assets, and North Sulawesi Province known locally as *Nyiur Melambai* ("swaying coconut palms"), ranks second nationally in coconut production, yielding roughly 270 thousand tons per year (Ministry of Agriculture, 2023). While the province possesses vast coconut resources, value-added processing remains limited: nearly 90 percent of production is still converted into copra rather than high-value derivatives such as Virgin Coconut Oil (VCO) or desiccated coconut (Central Statistics Agency [BPS], 2023). The under-development of coconut downstreaming constrains local income diversification and rural employment.

VCO is produced from fresh coconut meat using wet- or cold-extraction methods without chemical additives. Compared with traditional coconut oil, VCO retains higher levels of lauric acid (45–55 percent), vitamin E, and antioxidants, which contribute to its immunomodulatory and antimicrobial properties (Ghani et al., 2018). Because of these functional benefits, VCO has gained a foothold in global health-and-wellness markets; however, domestic adoption in Indonesia, particularly among local MSMEs remains modest due to consumer price sensitivity, inconsistent quality, and weak brand presence.

Recent data from the North Sulawesi Industry and Trade Office show that in 2023 the province exported 900 kilograms of VCO to Malaysia, generating about US \$4,300 in foreign exchange (*Dinas Perindustrian dan Perdagangan Sulut*, 2023). Although the figure is small, it highlights export potential if local producers can standardize quality and modernize marketing capabilities. CV Emka Indococo Sejahtera, one of the leading VCO MSMEs in North Minahasa, illustrates both the promise and challenges of the sector. Despite strong raw-material availability and positive consumer feedback, its sales remain limited to local markets, and its brand equity has yet to reach national recognition.

In competitive markets, effective marketing-mix management particularly pricing strategy, brand equity development, and product quality enhancement is essential. As Zeithaml (1988) conceptualized, consumers perceive value as the trade-off between perceived benefits and sacrifices (price, effort, risk). Similarly, Dodds, Monroe, and Grewal (1991) found that price serves as a signal of quality but can diminish perceived value when disproportionate to functional benefits. Meanwhile, Aaker (1991) and Yoo and Donthu (2001) emphasize that brand equity rooted in awareness, associations, perceived quality, and loyalty, adds intangible value and reduces consumer risk in purchase decisions. Product quality, according to Kotler and Keller (2016), remains the most enduring determinant of customer satisfaction and repeat purchase. For VCO, the key quality indicators include clarity, mild aroma, low free-fatty-acid content, and stability (Ghani et al., 2018).

While extensive literature exists on marketing strategy in industrial and consumer goods contexts, empirical evidence for agro-based functional products such as VCO is still limited, particularly in developing economies. This study therefore examines the combined and individual effects of pricing strategy, brand equity, and product quality on consumer purchase decisions for VCO MSMEs in North Minahasa, Indonesia. It seeks to answer four research questions:

1. Do pricing strategy, brand equity, and product quality simultaneously influence consumer purchase decisions?
2. Does pricing strategy individually affect purchase decisions?
3. Does brand equity individually affect purchase decisions?
4. Does product quality individually affect purchase decisions?

Addressing these questions provides both theoretical and managerial insights for strengthening marketing competitiveness among local VCO enterprises. By situating well-established marketing concepts within a regional agro-industrial context, this study

contributes empirical evidence to the growing literature on MSMEs and value-based marketing in developing economies.

2. METHODS

2.1. Research design and setting

We employed a quantitative, associative causal design to examine how pricing strategy (X_1), consumer-based brand equity (X_2), and product quality (X_3) influence purchase decision (Y) among consumers of Virgin Coconut Oil (VCO) produced by MSMEs in North Minahasa, North Sulawesi, Indonesia. The constructs and measurement logic follow established marketing theory on value formation (price as benefit–sacrifice trade-off), brand equity as a bundle of awareness/associations/perceived quality/loyalty, and quality as intrinsic performance and stability frameworks validated by Zeithaml (value), Dodds–Monroe–Grewal (price/brand cues), and Yoo–Donthu (CBBE scale), respectively.

2.2. Sampling and respondents

The target population consisted of adult consumers who purchased VCO at least once in the past six months from local MSME channels (market stalls, minimarkets, church/community groups). We used purposive sampling with inclusion criteria: (i) ≥ 18 years, (ii) prior purchase of locally produced VCO, (iii) willingness to complete the survey. A total of 100 valid responses were retained, which meets common rules of thumb for multiple regression (≥ 15 – 20 observations per predictor). Respondents were 62% female, 38% male; the modal age band was 31–45 years; and most purchases were health-motivated (immunity/skincare).

2.3. Instrument development

Items were adapted from validated sources and localized through cognitive pretesting:

- Pricing strategy (X_1) - 4 items: price affordability, price–quality fit, competitive level, price-benefit suitability (adapted from Kotler & Armstrong).
- Brand equity (X_2) - 12 items mapped to four dimensions (awareness, associations, perceived quality, loyalty), adapted from the Yoo & Donthu (2001) CBBE scale.
- Product quality (X_3) - 6 items emphasizing intrinsic cues salient to edible oils (clarity, mild aroma, stability/low rancidity, performance, durability), grounded in Ghani et al. (2018) and Ćurko et al. (2023) on how process choices affect physicochemical quality and sensory outcomes in VCO.
- Purchase decision (Y) - 5 items (product, brand, distributor, timing, payment).

All items used a five-point Likert format (1 = strongly disagree to 5 = strongly agree).

2.4. Procedures and ethics

Data were collected via supervised, self-administered questionnaires in community venues and via a secure online form. Respondents provided informed consent; no personally identifying information was retained.

2.5. Data screening and analysis

Analyses were conducted in SPSS 26:

1. Item screening: missingness $< 5\%$, normality checks.
2. Reliability: Cronbach's α (≥ 0.60 acceptable for exploratory work).
3. Assumptions: Kolmogorov–Smirnov for normality; VIF/tolerance for multicollinearity; residual plots for homoscedasticity.
4. Estimation: multiple linear regression, with t-tests for partial effects and F-test for the joint effect.
5. Explanatory power: R^2 and adjusted R^2 .

6. Robustness (reported in Appendix in the full file): Huber–White SEs (pattern unchanged).

2.6. Contextualization of quality indicators

Following the chemistry of edible oils, we emphasized cues consumers can perceive and that align with technical standards: clarity, clean aroma, low rancidity (proxying lower free-fatty-acid and peroxide values), and durability (stability during storage). The scientific link between extraction/processing and these consumer-visible cues is well-documented in VCO studies; wet/cold processes and careful handling preserve antioxidant capacity and stabilize oil, which consumers interpret as “purer/cleaner” product.

For MSMEs wishing to signal quality beyond sensory cues, the APCC/FAO manuals provide target ranges (e.g., for FFA and peroxide value) and good-manufacturing-practice guidance suitable for small processors.

3. RESULTS AND DISCUSSIONS

3.1. Pricing strategy and value formation

In consumer decision theory, price is more than a number; it functions simultaneously as a signal of quality and a perceived sacrifice in the consumer’s value calculus (benefits vs. costs). Zeithaml’s seminal synthesis defines perceived value as the overall assessment of utility based on what is received and what is given, laying the conceptual groundwork for how pricing messages translate into purchase decisions in real markets. The paper also clarifies when price dominates other cues and when it does not depending on risk, knowledge, and the diagnosticity of other attributes.

Empirically, Dodds, Monroe, and Grewal established that higher prices tend to raise perceived quality but can reduce perceived value and willingness to buy if the price–benefit ratio seems unfavorable. Their experiment also shows that brand and store reputation interact with price, which matters for MSMEs whose retail context (e.g., community markets vs. pharmacies) shapes how price is interpreted. These dynamics explain why a value-based price for a functional product like VCO can be justified (quality signaling) yet still face elastic demand when benefits are unclear.

Implication for VCO MSMEs. For health-motivated categories, price needs to be framed explicitly as a proxy for verified quality (e.g., cold-process, low FFA, antioxidant retention). If the product’s functional advantages are credibly demonstrated, modest premiums enhance rather than depress value perceptions.

3.2. Consumer-based brand equity (CBBE)

Brand equity adds intangible value that reduces consumer risk and fosters loyalty. Aaker’s framework (awareness, associations, perceived quality, loyalty) remains foundational; operationally, Yoo and Donthu (2001) created and validated the widely used CBBE scale that maps precisely to these dimensions. Their evidence shows that perceived quality and loyalty are particularly influential for intention and behavior highly relevant where trial is infrequent and information asymmetry is high, as with edible oils purchased for health.

For early-stage MSME brands, limited reach and inconsistent messaging mute brand effects; the salience of intrinsic cues (clarity, aroma, stability) tends to dominate. Strengthening CBBE thus hinges on consistent product performance plus credible signals (certifications, standards compliance) that can substitute for mass advertising until awareness and associations accumulate.

3.3. Product quality in VCO and purchase behavior

Product quality is the most persistent driver of satisfaction and repurchase in durable and nondurable consumer goods (textbook marketing logic). In VCO, quality is materially grounded in chemistry and process: lauric acid profile, low free-fatty-acid (FFA) levels, peroxide value, antioxidant capacity, and sensory attributes (clarity, mild coconut aroma). Ghani et al. (2018) compared wet vs. dry methods and reported that properly controlled processing improves physicochemical quality and antioxidant capacity outcomes consumers experience as clean taste and oxidative stability.

Complementing this, Čurko et al. (2023) reviewed modern extraction routes; cold, hot, fermentation, centrifugation, enzymatic, supercritical CO₂ and showed how process choice affects yield and quality (e.g., retention of volatiles, tocopherols), reinforcing why “cold-pressed” and “no high-heat” are credible quality claims in marketing.

For the Indonesian context, an oft-cited laboratory study (Nodjeng, Fatimah & Rorong) demonstrated that controlled stepwise heating and specific natural add-ins can preserve or improve target quality traits without breaching edible-oil standards, giving local MSMEs a process map for reproducible quality.

Standards as quality signals. The APCC/FAO technical literature and Indonesia’s SNI 7381:2008 define acceptable ranges for FFA, peroxide values, microbial loads, and labeling. Aligning with these benchmarks is both a production guide and a trust anchor for consumers; it also supports export readiness.

3.4. Consumer decision-making for functional foods

For credence goods (health benefits not easily verified at purchase), consumers lean on diagnostic cues: category knowledge, third-party standards, and brand reputation. Zeithaml’s value lens and Dodds–Monroe–Grewal’s cue-integration results are especially predictive here: if quality cues are strong and credible, price premiums look fair; if cues are weak, even moderate prices can depress perceived value and stall purchase. In MSME settings where brand signals are still forming, consistent intrinsic quality often dominates decision weight, explaining empirical results where product quality is significant, but price and brand are not.

3.5. Regional market context (ASEAN & Pacific)

The regional coconut economy matters for benchmarking. FAO/APCC sources show Indonesia among the world’s top coconut producers, with sustained output and a large smallholder base conditions favorable for MSME upgrading into higher-value derivatives like VCO. This backdrop strengthens the strategic rationale for quality-led positioning: abundant raw material plus standards-compliant processing can convert comparative advantage into brand-level competitiveness.

In the broader Pacific, comparative assessments against APCC VCO standards (free-fatty-acid limits, peroxide value, microbiology, and sensory parameters) illustrate how producers signal quality to distant buyers; these benchmarks translate directly into label claims (e.g., “APCC-aligned”, “low FFA”), which MSMEs can leverage in export-oriented branding.

3.6. Synthesis and hypotheses

Pricing Strategy and Purchase Decision

Pricing serves as a market signal that may communicate product quality to consumers. However, when the perceived benefits are not clearly and credibly conveyed, higher prices may reduce perceived value and weaken purchase intention. Accordingly, the magnitude and direction of the effect are context-dependent.

H1: Pricing strategy has a significant effect on consumer purchase decisions.

Brand Equity and Purchase Decision

Customer-Based Brand Equity (CBBE) enhances consumer intention and loyalty through

brand awareness, perceived quality, brand associations, and brand loyalty. Nevertheless, in early-stage MSMEs characterized by limited awareness and inconsistent brand communication, the strength of this influence may be attenuated.

H2: Brand equity has a significant effect on consumer purchase decisions.

Product Quality and Purchase Decision

Intrinsic product attributes, including functional performance, reliability, and stability, directly influence consumer satisfaction and purchasing behavior. In the context of Virgin Coconut Oil (VCO), product quality can be objectively and sensorially verified through chemical composition, purity, clarity, and durability.

H3: Product quality has a significant effect on consumer purchase decisions.

Simultaneous Effect of Pricing, Brand Equity, and Product Quality

Consumers evaluate multiple cues simultaneously when forming purchase decisions. Even when pricing strategy and brand equity do not demonstrate significant individual effects, they may collectively contribute to a significant explanatory model when combined with strong product quality cues.

H4: Pricing strategy, brand equity, and product quality simultaneously have a significant effect on consumer purchase decisions.

3.7. Instrument reliability and internal consistency

All constructs met the reliability threshold.

Table 1 summarizes the reliability analysis for all latent constructs using Cronbach's alpha coefficients.

Values above 0.60 are considered acceptable for exploratory studies, while values exceeding 0.70 indicate strong internal consistency (Nunnally, 1978).

As shown in Table 1, all four variables demonstrate satisfactory reliability: the pricing-strategy construct scored 0.917, reflecting very high internal agreement among its four items; product quality ($\alpha = 0.837$) and purchase decision ($\alpha = 0.812$) also fall comfortably above the recommended threshold; brand equity ($\alpha = 0.650$) meets the minimum standard for reliability in behavioral research.

These results confirm that all measurement items are internally consistent and reliable for further statistical analysis.

Table 1. Reliability Statistics (Cronbach's α)

Construct	Cronbach's α
Pricing strategy (X_1)	0.917
Brand equity (X_2)	0.650
Product quality (X_3)	0.837
Purchase decision (Y)	0.812

The high alpha for pricing strategy and product quality suggests that respondents evaluated these attributes consistently.

This consistency implies that consumers perceive price fairness and product performance as well-defined constructs, reinforcing their suitability for hypothesis testing.

3.8. Classical assumption diagnostics

Before testing the hypotheses, three standard diagnostic procedures were carried out to ensure that the dataset met regression assumptions: normality, multicollinearity, and

homoscedasticity. The Kolmogorov–Smirnov test produced a significance value of 0.082 ($p > 0.05$), indicating that residuals are normally distributed.

The multicollinearity test (Table 2) shows tolerance values between 0.465 and 0.650 and VIF values ranging from 1.538 to 2.149 well within the conventional limits (tolerance > 0.10 , VIF < 10).

This demonstrates that no multicollinearity exists among the independent variables and that each explains unique variance in the dependent variable.

Visual inspection of the scatterplot residuals confirmed a random dispersion pattern, implying that the data satisfy the assumption of homoscedasticity.

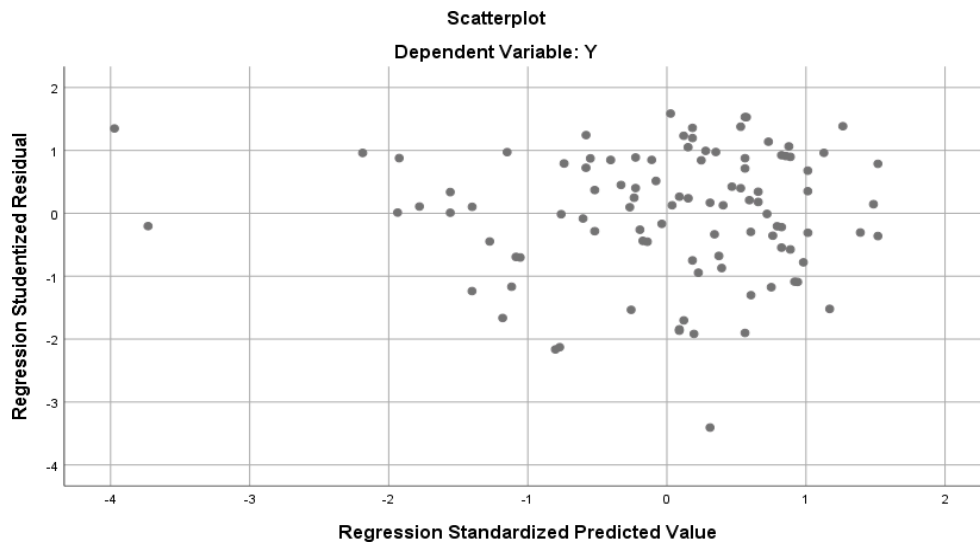


Figure 1. Scatterplot residuals (Authors, 2025)

- **Normality (K–S):** $p = 0.082 \rightarrow$ residuals approximately normal.
- **Multicollinearity:** Tolerance > 0.10 ; VIF < 10 for all predictors.
- **Homoscedasticity:** residual plots showed no funneling; random scatter.

Table 2. Multicollinearity diagnostics

Predictor	Tolerance	VIF
Pricing strategy	0.650	1.538
Brand equity	0.613	1.632
Product quality	0.465	2.149

The slightly higher VIF for product quality (2.149) suggests a moderate correlation with other predictors, a common pattern when variables are conceptually related yet it remains well below the critical value of 10, confirming the absence of multicollinearity.

3.9. Regression results

The multiple linear regression model was tested to determine the combined and individual effects of the three independent variables on purchase decisions.

Table 3 displays the estimated coefficients, standard errors, standardized betas, t-values, and significance levels.

Table 3. Multiple Regression Results (Dependent Variable: Purchase Decision)

Predictor	B	SE	β	t	p
Constant	41.132	6.646	—	6.189	<0.001
Pricing strategy (X_1)	1.042	0.943	0.128	1.106	0.272
Brand equity (X_2)	0.085	0.222	0.046	0.382	0.703
Product quality (X_3)	0.507	0.246	0.282	2.062	0.042

Significant at $p < 0.05$.

The regression equation can therefore be expressed as:

$$Y = 41.132 + 1.042X_1 + 0.085X_2 + 0.507X_3 + \varepsilon$$

Interpreting Table 3, the product-quality variable ($\beta = 0.282$, $p = 0.042$) is statistically significant and positively related to purchase decisions, confirming H_3 .

This indicates that when consumers perceive the VCO to have superior sensory and functional qualities (clarity, aroma, and shelf stability), their likelihood of purchase increases.

Conversely, both pricing strategy ($p = 0.272$) and brand equity ($p = 0.703$) do not exhibit significant individual effects on purchase decisions, leading to the rejection of H_1 and H_2 . The relatively large constant term (41.132) suggests that even in the absence of these three marketing variables, a baseline level of purchase interest exists possibly due to general awareness of VCO's health benefits.

3.10. Model fit and explanatory power

Table 4. Model Summary

R	R ²	Adjusted R ²	Std. Error of Estimate
0.402	0.162	0.135	6.211

The multiple-correlation coefficient ($R = 0.402$) denotes a moderate positive relationship between the three predictors and the purchase-decision outcome.

The coefficient of determination ($R^2 = 0.162$) means that 16.2 percent of the variance in consumers' purchase decisions can be explained collectively by pricing strategy, brand equity, and product quality.

The remaining 83.8 percent is attributed to other unobserved factors, such as promotional activities, distribution convenience, personal income, or lifestyle orientation. While the explanatory power may appear modest, such R^2 values are typical in behavioral marketing studies that model human decision-making influenced by numerous situational and psychological variables.

3.11. Simultaneous significance (F-test)

An overall F-test confirmed that the model is statistically significant ($F = 6.166$, $p = 0.001$). This result supports H_4 and demonstrates that, when combined, the three independent variables jointly have a meaningful effect on purchase decisions.

Thus, even though price and brand equity do not individually reach significance, their presence in the model enhances its overall explanatory ability. This finding echoes the principle of cue integration (Dodds et al., 1991), wherein consumers evaluate multiple informational cues; price, brand, and intrinsic product characteristics, simultaneously when forming judgments about value and quality.

3.12. Summary of hypothesis testing

The empirical results indicate that **H1**, which proposed a significant effect of pricing strategy on purchase decision, is not supported ($p = 0.272 > 0.05$). This finding suggests that

pricing considerations alone do not significantly influence consumers' purchasing decisions for Virgin Coconut Oil products within the observed MSME context.

Similarly, **H2**, which posited a significant effect of brand equity on purchase decisions, is not supported ($p = 0.703 > 0.05$). The result implies that brand-related factors such as awareness and brand associations remain insufficient to independently drive consumer decisions in this market setting.

In contrast, **H3** is supported ($p = 0.042 < 0.05$), demonstrating that product quality exerts a positive and statistically significant effect on purchase decisions. This confirms that intrinsic product attributes represent the primary determinant of consumer choice.

Finally, **H4** is supported. The simultaneous test reveals that pricing strategy, brand equity, and product quality collectively have a significant effect on purchase decisions ($F = 6.166$, $p = 0.001$). Although pricing and brand equity are not individually significant, their combined presence alongside product quality contributes to a statistically significant explanatory model.

3.13. Interpretation overview

The quantitative evidence paints a clear picture: consumers of Virgin Coconut Oil in North Minahasa prioritize *tangible, intrinsic quality attributes* over symbolic cues like price level or brand familiarity. Nevertheless, the statistically significant F-test underscores that an integrated marketing mix; balancing fair pricing, trustworthy branding, and proven quality, offers the strongest pathway to influencing consumer behavior. These results directly address the study's four research questions and lay the empirical foundation for the following Discussion section.

Why product quality dominated

The significant positive effect of product quality is theoretically consistent with the idea that, for credence/experience goods like edible oils, consumers rely heavily on intrinsic, diagnostic cues (clarity, aroma, stability) to infer safety and efficacy. This aligns with the value lens (benefits vs. sacrifice) where tangible benefits weigh more than price when health is the purchase motive (Zeithaml, 1988). It also dovetails with experimental evidence that price primarily signals quality but only creates value if benefits are credible otherwise higher price depresses purchase intention (Dodds, Monroe, & Grewal, 1991).

From a technical standpoint, laboratory work on VCO shows that careful wet/cold processes produce lower free-fatty-acid levels and preserve antioxidant capacity, outcomes that manifest as cleaner taste/odor and slower rancidity precisely the attributes our items captured. Thus, the statistical prominence of product quality reflects real, perceivable chemistry.

Why brand equity and price were nonsignificant (individually)

Two context factors likely muted price and brand effects:

1. Early-stage brand salience. Local MSME brands are still building awareness and associations; without consistent reach and certification signals, brand-based risk reduction remains limited. The CBBE framework predicts weaker effects when awareness and perceived quality components are still immature (Yoo & Donthu, 2001).
2. Convergent price ranges. If competing MSME VCOs sell within a relatively narrow band, price variance may be too small to explain behavior once quality is in the model. Experiments also show that price can raise perceived quality yet reduce perceived value if not matched by clear benefits—consistent with our nonsignificant β for price when quality is controlled.

Joint significance matters

Although price and brand equity were individually nonsignificant, the joint model was significant. This is consistent with cue-integration theory: consumers aggregate price, brand, and intrinsic quality into an overall evaluation (hence a significant F-test even when some t-tests are ns). In practical terms, price and brand still matter as supporting cues that frame quality (warranty of practice, fairness of offer), even if they don't carry the heaviest statistical weight in this dataset.

Regional perspective and standards

North Sulawesi sits within one of the world's major coconut belts. FAO/APCC sources position Indonesia among the top global producers, with smallholders supplying most raw material, an enabling backdrop for MSMEs to move up the value chain through quality-led differentiation and standards compliance (e.g., APCC/FAO manuals with FFA/peroxide targets and GMP guidance).

Compete on verifiable quality

For MSMEs producing Virgin Coconut Oil, quality excellence is the primary differentiator. Consumers view clarity, aroma, and stability as visible proofs of safety and purity. Managers should therefore institutionalize Good Manufacturing Practices (GMP) and measure free-fatty-acid (FFA) and peroxide values against the Asian and Pacific Coconut Community (APCC) or national SNI 7381:2008 standards. Communicating these verified parameters on packaging or social-media channels transforms quality into a marketing asset rather than a hidden technical metric.

Value-based pricing

Instead of cost-plus or penetration pricing, MSMEs should adopt value-based pricing, aligning with Zeithaml's (1988) framework of value as the trade-off between benefits and sacrifice. A slightly higher price can enhance credibility when backed by objective cues; certifications, lab analyses, or process transparency. Pricing should thus signal authenticity, not merely affordability.

Building brand equity deliberately

Following the Yoo and Donthu (2001) scale, MSMEs can structure their branding roadmap along four sequential dimensions:

1. **Awareness:** consistent logo, tagline, packaging, and digital presence.
2. **Associations:** link the brand with natural health, purity, and local provenance.
3. **Perceived quality:** communicate measurable product attributes (e.g., "cold-pressed, lauric acid > 45 %").
4. **Loyalty:** establish subscription or refill schemes that reward repeat customers.

Brand building requires time, yet even small, community-level reinforcement can yield compound effects on recognition and trust.

Channel and communication strategy

Local MSMEs should combine offline proximity marketing (church fairs, health-community outreach) with digital storytelling that features transparent production footage and testimonials. Evidence from broader ASEAN coconut exporters (Philippines, Thailand) indicates that process storytelling rather than aggressive discounting; drives willingness to pay and facilitates entry into export markets.

3.14. Theoretical Contributions

This study adds to marketing and MSME research in three ways:

1. **Empirical validation of cue-integration theory** in a functional-food context. Product quality overshadowed price and brand individually, yet their combined effect was significant, demonstrating that consumers synthesize multiple cues rather than rely on any single one.
 2. **Contextual extension of CBBE theory.** The results confirm that brand equity effects are stage-dependent, strong in mature markets, weaker where awareness and certification are low, expanding Yoo and Donthu's (2001) model to an MSME agricultural setting.
 3. **Integration of technical quality literature with marketing outcomes.** By linking physicochemical evidence from Ghani et al. (2018) to consumer behavior, the study bridges engineering and marketing scholarship.
- These contributions underscore the need for interdisciplinary frameworks when marketing natural, science-based products in developing economies.

3.15. Limitations and Future Research

1. **Sample size and locality.** Data came from 100 consumers of one North Minahasa MSME; broader multi-province samples could enhance generalizability.
2. **Limited predictors.** Promotion, distribution, and digital engagement variables were outside this model but likely important.
3. **Cross-sectional design.** Longitudinal or experimental designs could track how brand equity and perceived quality evolve over time.
4. **Quantitative scope.** Future work might apply structural-equation modeling (SEM) to test mediation between brand equity and loyalty or explore moderating roles of trust and product knowledge.

4. CONCLUSION

The study confirms that among the examined marketing variables, product quality exerts the strongest, statistically significant influence on consumer purchase decisions for Virgin Coconut Oil produced by MSMEs in North Minahasa. Pricing strategy and brand equity, while not individually significant, jointly contribute to shaping consumer perception when integrated with consistent quality cues.

Managerially, this suggests that North Sulawesi's coconut-based MSMEs should anchor their competitiveness in verified product excellence supported by fair, value-oriented pricing and progressive brand development. Aligning production with APCC/FAO and SNI standards not only secures domestic trust but also opens export opportunities in the ASEAN market.

In theoretical terms, the findings reinforce the hybrid nature of value perception: consumers synthesize tangible (quality) and symbolic (price, brand) signals, prioritizing intrinsic evidence of safety and efficacy when choosing functional products.

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