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Influence of product quality and perceived value on customer catisfaction and loyalty in clinical skincare products

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ABSTRACT

This study aims to analyze the influence of Product Quality and Perceived Value on Customer Satisfaction and their implications for Customer Loyalty among users of clinical skincare products in Serang City. The research method used a quantitative approach with Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis techniques, involving 195 respondents. The results indicate that Product Quality and Perceived Value have a positive influence on Customer Satisfaction. Furthermore, Customer Satisfaction has been shown to contribute to increasing Customer Loyalty. Furthermore, Product Quality and Perceived Value also directly influence Customer Loyalty. These findings strengthen the evidence that a satisfying user experience and perceived value play a crucial role in fostering customer loyalty. Managerial implications suggest that beauty clinics need to prioritize improving product quality and perceived customer value to maintain loyalty. This study is limited by the region and the dominance of a single brand in the sample. Therefore, further research is recommended with a broader scope and involving a variety of clinical skincare brands.

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1. INTRODUCTION

In recent years, Indonesia's clinical skincare industry has grown rapidly, reflecting increased public awareness of skincare and a shift toward natural product ingredients (Khasbulloh & Suparna, 2022). This expansion has intensified competition among brands as many new products enter the market. In such an environment, skincare companies must not only attract new customers but also retain existing ones. Understanding customer loyalty is crucial for sustaining sales; loyalty often depends on the value customers perceive in a product (Khasbulloh & Suparna, 2022).

In Indonesia's clinical skincare market, loyalty formation hinges on how customers judge product quality and the value they receive in a regimen-based, physician-guided setting. Customers face perceived switching risks (e.g., relapse, irritation) and rely on signals of quality such as BPOM approval, evidence-based active

ingredients, and dermatologist credibility. At the same time, value perceptions are shaped by bundled treatment plans, follow-up consultations, and transparent pricing amid intense local foreign competition and social media word of mouth. These contextual features make the quality value loyalty nexus especially salient and merit empirical testing in a clinical (not merely cosmetic) skincare setting.

Compared with non-clinical, mass-market skincare where variety seeking, promotions, and brand image often drive repeat purchase, clinical skincare loyalty is more adherence driven: customers commit to multi-visit treatment plans, personalized formulations, and physician follow-ups. Switching entails higher perceived cost and uncertainty, so loyalty is more strongly conditioned by judged product quality (efficacy, safety, tolerability) and perceived value (fair pricing of packages, access to professional advice, and after-sales care). This distinction strengthens the theoretical and managerial justification for studying quality and perceived value as direct and indirect drivers of loyalty in the clinical segment.

Product quality and perceived value are two key factors that drive customer loyalty. High product quality means meeting or exceeding consumer needs and expectations; it can strongly influence whether customers choose a product (Rohmah et al., 2023; Slater et al., 2025). Perceived value refers to a customer's overall evaluation of a product based on the benefits received relative to costs (Shen et al., 2024). When consumers feel they are getting valuable benefits for example, effectiveness and satisfaction that exceed what they paid they experience higher satisfaction (Hafidz & Huriyahnuryi, 2023).

Customer satisfaction is an important mediator between product attributes and loyalty. Even products of equal quality can yield different satisfaction levels across customers, depending on individual expectations and perceptions (Huddin et al., 2024). Therefore, companies must build strong relationships with customers by ensuring high product quality and clear value delivery (Donsuchit & Nuangjamnong, 2022). Satisfied customers tend to repurchase; indeed, satisfaction often motivates repeat purchases and strengthens loyalty over time (Upamannyu et al., 2015; Vaniara & Pramono, 2022). In other words, when consumers feel their chosen skincare product delivers quality and valuable outcomes, they become loyal to the brand (Hafidz & Huriyahnuryi, 2023; Vaniara & Pramono, 2022).

Despite the recognized importance of quality and value, local skincare clinics face challenges in retaining customers amidst new alternatives. Consumers who know the quality of a product and perceive high value from it are more likely to remain loyal, but this dynamic is not fully understood in the Indonesian market. Customer loyalty manifests when positive satisfaction and perceived value prompt consumers to make repeat purchases of a skincare product. For example, a person who is deeply satisfied with a local skincare clinic's product may repurchase it and resist switching even if competitors offer promotions (Abdullaeva, 2020).

It is urgent for businesses to understand how product quality and perceived value influence satisfaction and loyalty in the local skincare sector. Strong customer loyalty leads to sustainable sales and can create positive word-of-mouth. In Indonesia's competitive skincare market, local companies need evidence on which factors keep customers returning. This research can guide managers to focus on the right product attributes and marketing strategies that maintain loyalty, thereby improving business sustainability. By filling gaps in knowledge, the study also contributes to academic understanding of consumer behavior in emerging markets.

Prior studies have examined the links among product quality, satisfaction, and loyalty. For instance, high product quality is known to significantly enhance customer satisfaction (Abigail et al., 2024; Pemayun & Seminari, 2020; Wibowo, 2021; Wydyanto & Ilhamalimy, 2021). Customer satisfaction in turn is a strong predictor of loyalty (Abdullaeva, 2020; Hafidz & Huriyahnuryi, 2023; Huddin *et al.*, 2024; Khasbulloh &

Suparna, 2022). Some research also found that product quality directly affects loyalty (Abigail *et al.,* 2024; Grace *et al.,* 2021; Pemayun & Seminari, 2020). However, many of these studies did not include perceived value. Perceived value is known to influence satisfaction (Al Amin & Dhewi, 2021; Khasbulloh & Suparna, 2022; Vaniara & Pramono, 2022) and loyalty (El-Adly, 2019; Khasbulloh & Suparna, 2022; Vaniara & Pramono, 2022) in other contexts. For example, higher perceived value leads to greater satisfaction (Hafidz & Huriyahnuryi, 2023) and fosters loyalty (El-Adly, 2019). Yet, in local skincare research, perceived value has often been overlooked. This study addresses that gap by incorporating both product quality and perceived value in examining their effects on satisfaction and loyalty.

This study aims to explore the effects of product quality and perceived value on customer satisfaction and loyalty in the local skincare clinic industry. Specifically, it seeks to understand how these factors influence customers' satisfaction with the product and their subsequent loyalty (repeat purchase behavior). The research also considers how satisfaction mediates the relationship between quality/value and loyalty. By analyzing these relationships, the study provides insights for skincare producers on enhancing customer loyalty and identifies areas for further research.

2. RESEARCH METHOD

The indicators used are derived from previous research with modifications. The brand image variable is adopted from Carrol & Ahuvia (2006) and Sofia (2023) with 4 questions. The E-Service Quality variable is adopted from Dayani et al. (2022) with 8 questions. The patient satisfaction variable has 5 questions adopted from Dayani et al. and Sofia (2023). The patient trust variable has 5 questions adopted from Sofia (2023). Lastly, the patient loyalty variable is adopted from Sofia (2023) with 5 questions. The Likert scale is used to measure the values or attitudes given by respondents to a question. The number of questions or questionnaires used in this study was 28 questions.

This study used a quantitative explanatory survey design to test the hypothesized causal relationships. A cross-sectional online questionnaire was administered to consumers of local skincare clinic products. The research framework is apply a quantitative approach using the Covariance-Based Structural Equation Modeling (CB-SEM) method. CB-SEM is chosen when researchers test a complex model or research framework with a focus on causal relationships between variables and is suitable for use when data is normally distributed.

A total of 28 items were employed to measure the key constructs in this study, each evaluated using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Product Quality was measured using 8 items adapted from Das Guru and Paulssen (2020), capturing various dimensions of product excellence and performance. Perceived Value was assessed through 8 items derived from Sweeney and Soutar (2001), reflecting both economic and emotional dimensions of consumer value perception. Customer Satisfaction was measured with 6 items adapted from Chandra et al. (2018), aimed at evaluating respondents' overall satisfaction with the product. Finally, Customer Loyalty was measured using 6 items developed by Han and Ryu (2009), focusing on behavioral intentions and loyalty-related actions. All measurement scales were pre-tested and demonstrated strong content validity.

The target population comprises consumers in the Jabodetabek area who have used local clinical skincare products. A purposive sampling method was employed: respondents had to be aged 18 or above and have used at least one clinical skincare product for a minimum of three months. Data were collected via an online survey (Google Forms) distributed through social media from May to June 2025. Based on Hair et al.

(2021) guidelines (5–10 times the number of items), a minimum sample of 140 was needed. In total, 195 respondents completed the questionnaire.

The final sample size of 195 was determined with reference to SEM guidelines and the study context. Following Hair et al. (2021), a minimum of 5–10 respondents per indicator (28 items) implies 140-280 observations; a priori considerations to detect at least medium effects with α=0.05 and power≈0.80 likewise support a sample above 150. We additionally applied inclusion criteria (≥3 months of clinical product use; age ≥18) and recruited across common user channels in Serang to capture the active clinical-user population. Representativeness was enhanced by variation in age, gender, usage duration, and clinic brands; nonetheless, the observed dominance of one brand (>80%) reported transparently in the Results means generalization across brands should be made with caution and motivates the multi-region/multi-brand extensions we propos

Data analysis followed CB-SEM procedures using SmartPLS software. Initial steps included testing reliability and validity of the measurement model. Convergent validity was assessed by checking that each indicator's loading on its construct exceeded 0.70. Composite Reliability (CR) and Cronbach's alpha were computed for each construct (threshold >0.70), and Average Variance Extracted (AVE) was checked (>0.50). Discriminant validity was examined through Fornell–Larcker criteria and HTMT ratios (Hair et al., 2021). For hypothesis testing, the structural model was evaluated by examining path coefficients (β), t-values, and p-values from bootstrapping (with a significance criterion of t-value > 1.96, p-value < 0.05). R^2 values for endogenous constructs (satisfaction, loyalty) were used to assess explanatory power. All analyses adhered to standard SEM practices (Hair et al., 2021).

Drawing upon the explanations presented in the introduction, which outline the theoretical foundation and relevant previous studies related to this research, the researcher formulated the following research framework and hypotheses:

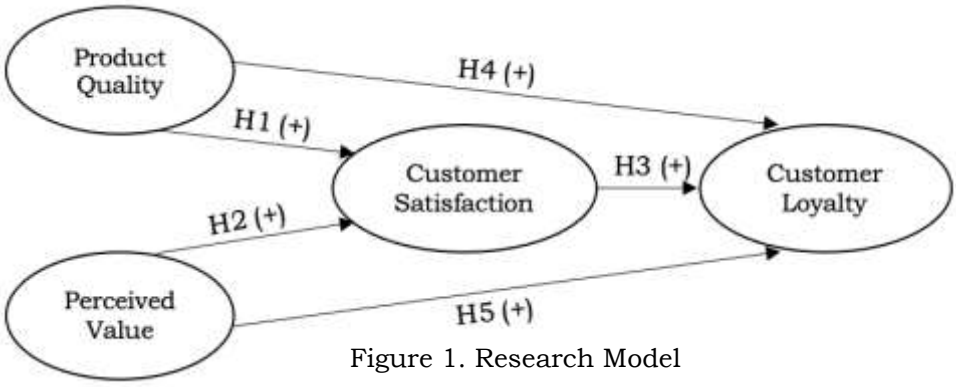

Figure 1. Research Model

Hyppothesis:
H1: Product Quality has a positive effect on Customer Satisfaction.
H2: Perceived Value has a positive effect on Customer Satisfaction.
H3: Customer Satisfaction has a positive effect on Customer Loyalty.
H4: Product Quality has a positive effect on Customer Loyalty.
H5: Perceived Value has a positive effect on Customer Loyalty.

3. RESULTS AND DISCUSSIONS

A pilot test was conducted on a 28-item questionnaire involving an initial sample of 30 respondents. Data were analyzed using SPSS software. To assess construct validity, a

bivariate correlation analysis was conducted for each item, yielding a 2-tailed significance level below 0.05 indicating that the items met the requirements for factor analysis (Hair et al., 2021). Reliability testing using Cronbach's Alpha yielded coefficients above 0.70, with most values approaching 1.0, indicating strong internal consistency (Hair et al., 2021). Based on these findings, all questionnaire items were declared valid and reliable for use in the main data collection stage.

Data were collected between May and July 2025 from a total of 195 respondents. The majority were female (83.1%) and aged 26–30 years (46.2%). Most participants worked in the private sector (49.7%), with others being entrepreneurs (25.6%) or civil servants (24.6%). Monthly income was primarily in the IDR 5–10 million range (49.2%). Over 80% used skincare products from Zeze Clinic Pratama, while smaller proportions used Athena (5.0%), Benings (5.6%), Natasha (4.6%), and Erha (4.1%). Most had used the products for 9–12 months (33.8%), followed by 6–8 months (31.3%), over 12 months (22.6%), and 3–5 months (12.3%).

This study utilizes covariance-based structural equation modeling (CB-SEM) conducted through SmartPLS, given its appropriateness for handling small sample sizes, non-normal data distributions, and complex model specifications. In the initial phase, the measurement (outer) model was examined, wherein all indicators demonstrated factor loadings exceeding the recommended threshold of 0.70, thereby confirming indicator validity as suggested by Hair et al. (2021). Subsequently, construct validity and reliability were evaluated within the SmartPLS environment. Validity was supported by Cronbach's alpha values greater than 0.70, while reliability was affirmed through composite reliability values equal to or above 0.70 and average variance extracted (AVE) values surpassing 0.50 (Hair et al., 2021). All indicators met the established criteria, as detailed in Table 1.

Table 1. Validity and Reliability

Variable	CA	CR	AVE
Product Quality	0.954	0.954	0.722
Perceived Value	0.948	0.948	0.695
Customer Satisfaction	0.946	0.940	0.720
Perceived Organizational Justice	0.929	0.917	0.656

Source: Primary Data Processed by Researchers, 2025

This study established discriminant validity by satisfying several predefined criteria. Discriminant validity was assessed using the Heterotrait–Monotrait (HTMT) ratio, which compares correlations across different constructs (heterotrait) with correlations within the same construct (monotrait). According to Hair et al. (2021), the HTMT value should not exceed 0.90. The results of the HTMT analysis are presented in Table 2.

Table 2. Heterotrait-Monotrait Ratio

Variable	Customer Loyalty	Customer Satisfaction	Perceived Value	Product Quality
Customer Loyalty	-	-	-	-
Customer Satisfaction	0.707	-	-	-
Perceived Value	0.660	0.634	-	-
Product Quality	0.621	0.521	0.412	-

Source: Primary Data Processed by Researchers, 2025

The structural model analysis includes an evaluation of the coefficient of determination (R^2) for each equation, reflecting the proportion of variance in the dependent variable accounted for by the independent variables. The corresponding R^2 values are summarized in Table 3.

Table 3. R-Square Tabel

Variable	R-Square
Customer Loyalty	0.556
Customer Satisfcation	0.413

Source: Primary Data Processed by Researchers, 2025

The evaluation of the R-squared (R^2) values for each structural equation represents a critical step in assessing the explanatory power of the structural model. These values indicate the proportion of variance in the endogenous variables that can be explained by the exogenous constructs included in the model. For the customer satisfaction variable, 41.3% of its variance is accounted for by product quality and perceived value, while the remaining 58.7% is attributed to other factors not captured within the scope of this study. Similarly, customer loyalty is directly influenced by product quality, perceived value, and customer satisfaction, collectively explaining 55.6% of its variance. The remaining 44.4% is presumed to result from external factors beyond the proposed model.

An R^2 of 0.556 for Customer Loyalty indicates that more than half of loyalty variance is jointly explained by product quality, perceived value, and satisfaction substantial explanatory power for a behavioral outcome. Managerially, this means clinics can move the needle on retention by prioritizing levers that raise these constructs: (i) product-quality assurance (stable, well-tolerated actives; BPOM compliance; clear efficacy evidence), (ii) perceived-value programs (transparent package pricing, loyalty and referral rewards, trial sizes, and satisfaction guarantees), and (iii) satisfaction-centric service design (personalized consultations, progress tracking, and responsive after-care). Because 44.4% of variance remains outside the model, clinics should monitor complementary drivers such as service recovery, brand image, and perceived switching costs when designing retention portfolios

This study employed structural equation modeling (SEM) to test the hypothesized relationships within the proposed framework. All three hypotheses were statistically supported, as evidenced by t-values exceeding the critical threshold of 1.96 and p-values less than 0.05. A comprehensive overview of the SEM results, including standardized path coefficients and their significance levels, is presented in Figure 1 and summarized in Table 4.

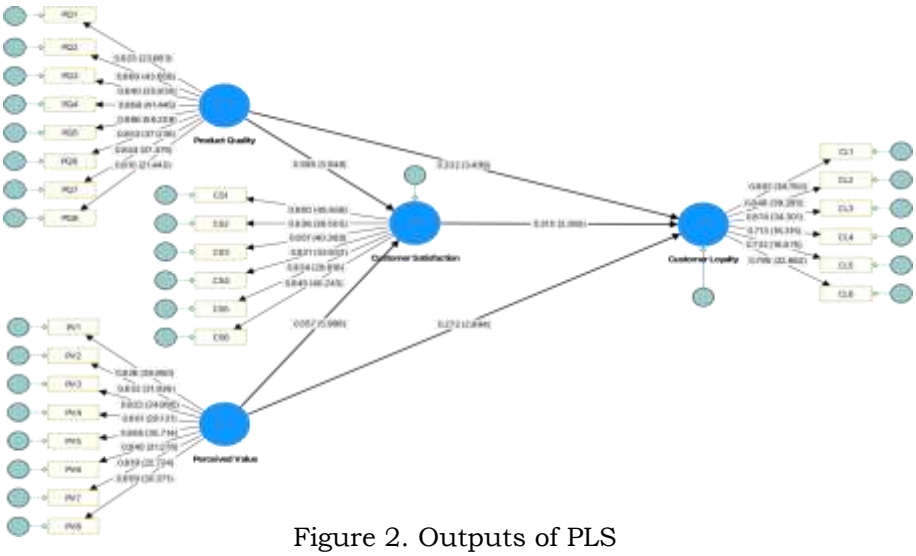

Figure 2. Outputs of PLS

Source: Primary Data Processed by Researchers, 2025

Table 4. Hypothesis Result

Hypothesis	Variable	Original Mean	T-Value	P-Value	Information
H1	Product quality has a positive influence on customer satisfaction.	0.351	0.348	0.000	Data supports the hypothesis
H2	Perceived value positively affects customer satisfaction.	0.538	0.535	0,000	Data supports the hypothesis
H3	Customer satisfaction has a positive impact on customer loyalty.	0.361	0.358	0,000	Data supports the hypothesis
H4	Product quality exerts a positive effect on customer loyalty.	0.352	0.356	0,000	Data supports the hypothesis
H5	Perceived value has a positive relationship with customer loyalty.	0.302	0.306	0.002	Data supports the hypothesis

Source: Primary Data Processed by Researchers, 2025

Table 4 presents the results of the hypothesis testing, indicating that all path coefficients (original sample values) are positive for example, 0.307 for H1, 0.488 for H2, and so forth suggesting that each independent variable exerts a positive effect on its corresponding dependent variable. According to the evaluation criteria in SmartPLS, a path is considered statistically significant when the T-value exceeds 1.96 and the P-value is below 0.05 (Hair et al., 2021). In this analysis, all T-values substantially surpass the threshold of 1.96 (with most values exceeding 3.5), and all P-values are recorded at 0.000, indicating robust statistical significance for all proposed hypotheses (H1 through H5).

Product Quality plays a fundamental role in shaping Customer Satisfaction, particularly in the clinical skincare industry where personal experience and consumer perception are crucial. Field data from Serang City reveals that customers who perceived high product quality characterized by ease of use, comfort on the skin, aesthetic appeal, and effectiveness tended to report higher overall satisfaction. These findings reinforce prior research, such as Abigail et al. (2024), which states that superior local product quality directly contributes to customer satisfaction. Wibowo (2022) also emphasizes that a pleasant usage experience builds positive perceptions, which become the foundation of long-term satisfaction. Thus, product quality should be viewed not merely as a technical attribute, but as a strategic element in fostering lasting customer relationships.

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Customer Satisfaction positively influences Customer Loyalty, especially when satisfaction includes emotional dimensions such as increased self-confidence and a sense of personal well-being. Respondents in this study who experienced emotional satisfaction were more likely to remain loyal and recommend the product to others. This aligns with findings by Abdullaeva (2020) and Huddin et al. (2024), who confirm that emotional satisfaction is a key driver of long-term loyalty across service sectors. Theoretically, the transformation from satisfaction to loyalty represents a psychological process where fulfilling experiences create enduring impressions that shape consumer attitudes and behaviors. To capitalize on this, skincare clinics should invest not only in product performance but also in user experience elements that generate emotional engagement such as elegant packaging, soothing aromas, and personalized consultations.

Product Quality also has a direct and significant influence on Customer Loyalty, especially through the aesthetic and sensory dimensions of the product. The field results show that customers who valued elegant packaging, calming color schemes, and smooth product textures developed emotional bonds with the brand and were less likely to switch. Grace et al. (2021) note that physical performance and visual appeal enhance brand perception, while Pemayun & Seminari (2020) highlight that in competitive skincare markets, sensory differentiation fosters long-term loyalty. These findings imply that producers should adopt a holistic approach to quality covering both active formulation and the overall sensory experience. Superior design and tactile satisfaction can contribute to a strong brand reputation and sustainable customer retention even in a saturated market.

Perceived Value significantly contributes to the formation of Customer Loyalty, as it reflects how consumers evaluate the fairness and attractiveness of the exchange between price and product benefits. Consumers who believe the product offers benefits exceeding the price are more likely to remain loyal, as shown by field data in which respondents expressed reluctance to switch brands when they felt they were receiving optimal value. This supports El-Adly (2019), who emphasizes the centrality of perceived value in both service and product loyalty, and Khasbulloh & Suparna (2022), who argue that perceived value often outweighs purely functional attributes. Clinics can enhance perceived value through strategies such as loyalty programs, bundled packages, satisfaction guarantees, and customer education. By doing so, they foster long-term relationships that withstand competitive pressures and build resilient customer loyalty.

4. CONCLUSION

Based on the hypothesis testing results using Covariance-Based Structural Equation Modeling (CB-SEM), this study concludes that product quality and perceived value exert a positive and significant influence on customer satisfaction, which subsequently enhances customer loyalty. All path coefficients were found to be positive with statistically significant t-values, indicating that the independent variables directly contribute to the dependent variables. Moreover, product quality and perceived value also demonstrated a direct influence on customer loyalty. These findings underscore the pivotal role of both variables in fostering consumer loyalty toward clinical skincare products, particularly within the Serang City context.

Nevertheless, the study is not without limitations, particularly in terms of sample scope and methodological approach. The sample consisted of 195 respondents, the majority of whom were female users of clinical skincare products residing in Serang City. Consequently, the generalizability of the findings to a broader population remains limited. Additionally, the study employed a cross-sectional design and focused only on a limited set of variables namely product quality, perceived value, and customer satisfaction thus restricting the exploration of other potentially influential factors, such as pricing strategies, brand image, or the overall customer experience.

The empirical findings provide meaningful managerial implications for stakeholders in the clinical skincare industry. The observed positive effects of product quality and perceived value on both customer satisfaction and loyalty suggest that these dimensions should be prioritized within customer relationship management strategies. It is recommended that skincare clinics consistently uphold product quality through innovation utilizing high-performing and safe active ingredients. Simultaneously, clinics should cultivate perceived value through effective customer education, transparent communication strategies, and targeted promotional programs. Furthermore, the provision of responsive and high-quality after-sales services is essential in strengthening

emotional bonds between customers and the brand, which in turn contributes to sustained customer loyalty.

To sustain loyalty through product quality and perceived value, local clinics should: institutionalize quality assurance (standardized compounding, stability testing, clear active-ingredient labeling), deliver evidence-based personalization (skin diagnostics and progress dashboards), and make value salient (transparent bundled pricing, membership tiers, and referral benefits). Enhance satisfaction via service touches appointment punctuality, post-treatment check-ins, and fast complaint resolution and communicate outcomes with before–after tracking and dermatologist-authored guidance. These practices translate improvements in judged quality and value into repeat purchase, positive word-of-mouth, and lower churn.

Future research should broaden external validity by sampling multiple cities beyond Serang and comparing public private clinic ecosystems. Model enrichment could integrate psychological mechanisms e.g., brand love, brand trust, perceived switching costs, and service recovery justice and test moderated mediation by demographic segments (age, gender) and clinic brand. Longitudinal or panel designs would capture adherence dynamics over treatment cycles, while mixed-methods could unpack how clinical advice and online word-of-mouth co-produce perceived value and loyalty.

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