

The Impact of Celebrity Endorsement, Online Customer Reviews, and Purchase Decisions on Consumer Satisfaction in Greater Surabaya's Beauty Industry

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ABSTRACT

Objective: This study aims to analyze the influence of Celebrity Endorsement (CE), Online Customer Review (OCR), and Purchase Decision (KP) on Consumer Satisfaction (KK) in the beauty industry across the Greater Surabaya area. **Method:** A quantitative survey approach was employed by distributing online questionnaires to 100 respondents who are users of Scarlett Whitening products. Data were analyzed using SmartPLS 4.1, including validity, reliability, and structural model testing. **Result:** The results reveal that OCR and KP have a positive and significant effect on consumer satisfaction, while CE shows no significant impact. The model achieved an R^2 value of 0.818, indicating substantial predictive ability. **Novelty:** These findings suggest that online customer reviews and purchase decisions play a more crucial role in enhancing consumer satisfaction compared to celebrity endorsements. Practically, the study highlights the importance of managing online reviews and optimizing consumer experience to strengthen brand loyalty in the beauty industry.

INTRODUCTION

The growth of the beauty industry in Greater Surabaya cannot be separated from the national trend, which shows a significant increase in the number of cosmetic products. BPOM data recorded that the number of cosmetic product registration applications rose sharply from around 60,000 in 2021 to more than 105,000 in 2023, although it slightly declined in 2024 [1]. This increase reflects the growing number of new cosmetic brands entering the market, both from local and international producers. The surge in product numbers indicates that the Indonesian market, particularly Greater Surabaya as one of the urban centers, is increasingly becoming a target for the beauty business. This trend aligns with the shifting consumer preferences, which are becoming more complex and diverse. One of the driving factors is the influence of the Korean Wave, which has successfully reshaped beauty standards in Indonesia. Consumers, especially the younger generation, are increasingly idolizing the Korean-style image of beauty characterized by healthy and natural-looking skin [2][3]. This encourages local brands to innovate in order to remain relevant to global trends while competing with international brands that have already established a strong presence in the market

The beauty industry today not only fulfills basic self-care needs but has also become an essential part of modern society's lifestyle and social identity. In recent years, Indonesia has recorded rapid growth in this sector, both in terms of the number of products and the variety of services offered. This shift provides strong evidence that

consumer behavior in the cosmetics industry is undergoing a significant transformation, accompanied by rising expectations for the quality and experience delivered by beauty products [4]. In this context, marketing strategies play a crucial role. Intense competition drives brands to compete not only in terms of product quality but also in their marketing communications. Celebrity endorsements and online customer reviews have emerged as two key instruments that shape consumer perceptions and influence purchasing decisions. Celebrity endorsers provide an aspirational image, while online customer reviews offer validation through real consumer experiences that build trust among potential buyers [5][6]. This socio-lifestyle phenomenon is further reinforced by the way consumers perceive beauty products not merely as utilities, but as part of self-expression, social identity, and lifestyle. Greater Surabaya, as an urban area with strong access to digital media, cosmetic stores, and global trends, serves as a real laboratory for observing how elements such as influencers, online reviews, K-Beauty trends, and visual aesthetics influence consumer preferences and satisfaction [6][4].

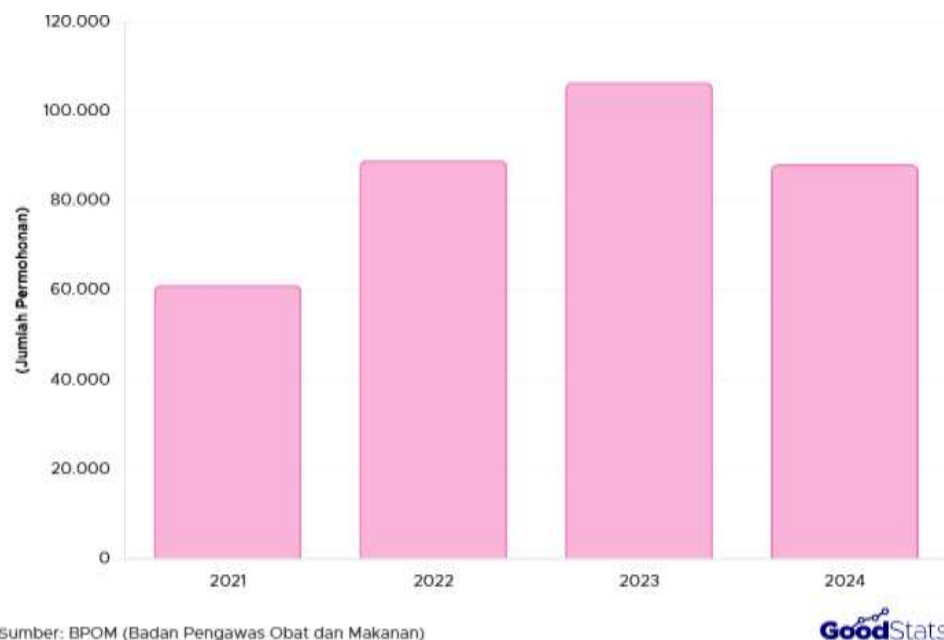


Figure 1. Number of Cosmetic Product Registration Applications in Indonesia, 2021–2024.

Source: GoodStats

Based on data from the National Agency of Drug and Food Control (BPOM) and GoodStats, the number of cosmetic product registration applications in Indonesia has shown a significant increase in recent years. In 2021, there were 61,201 applications, rising to 89,092 in 2022, and reaching its peak in 2023 with 106,457 applications. Although the number slightly declined in 2024 to 88,178 applications (as of August), the figure remains high. This trend confirms that Indonesia's cosmetic industry is experiencing rapid growth, in line with the increasing consumer demand for beauty products. The rise in registration applications not only reflects the high number of new products attempting to enter the market but also indicates stronger attention to regulatory and legal aspects.

This demonstrates that Indonesia's beauty market is becoming increasingly competitive and attractive for both local and international producers seeking to meet consumer needs and preferences. Within the context of Greater Surabaya as one of the key urban areas influencing lifestyle and consumer trends, this phenomenon provides a relevant foundation for examining consumer behavior, particularly regarding satisfaction and the factors influencing purchasing decisions. The rapid growth of the beauty industry, accompanied by intensifying competition, underscores the urgency of studying digital marketing strategies and consumer satisfaction as a means of understanding the dynamics of this evolving market.

Theoretically, consumer satisfaction is regarded as one of the key indicators in determining a company's success in retaining its customers. [7] states that consumer satisfaction arises when product performance meets or exceeds consumer expectations, which in turn can enhance loyalty and repurchase behavior. Furthermore, research conducted by [8] indicates that digital marketing strategies, including the use of social media, have a significant influence on consumer perceptions in the beauty industry. Meanwhile, [9] emphasizes that the intense competition in Indonesia's cosmetic market requires companies not only to prioritize product innovation but also to strengthen brand image and consumer engagement through digital platforms. The rapid growth of the beauty industry in Indonesia, particularly in urban areas such as Greater Surabaya, highlights the importance of research on consumer satisfaction and digital marketing strategies. This research is expected to provide both empirical and practical contributions in understanding market dynamics and formulating more effective strategies to face competition in the beauty industry. Purchase decisions in the beauty industry of Greater Surabaya are strongly influenced by various interrelated factors, as reflected in dynamic market trends [10][11]. Consumers' purchase decisions are shaped by their perceptions of product quality and strong brand image. Product innovation, driven by global beauty trends such as the Korean Wave, plays a crucial role in attracting consumer interest. In addition, effective digital marketing strategies, including the use of beauty influencers and social media, are highly instrumental in building brand awareness and influencing purchase decisions. Consumers in Greater Surabaya also place strong emphasis on price and product value, which means companies must offer high-quality products at competitive prices to win consumer preference.

By focusing on the continuously evolving needs and preferences of consumers, beauty companies in Greater Surabaya can consistently optimize their strategies to enhance customer satisfaction and maintain their relevance in an increasingly competitive market. In a deeper discussion, previous studies have shown that consumer purchasing decisions in the beauty industry of Greater Surabaya are also strongly influenced by prior customer experiences and reviews. Research by [12][13] revealed that recommendations from friends and family, as well as positive reviews on social media, significantly increase the likelihood of consumers purchasing certain products. Moreover, studies indicate that promotional campaigns and loyalty programs also have a substantial impact on encouraging purchase decisions. For example, loyalty programs

that provide discounts or free products after a number of purchases can improve customer retention and purchase frequency [14]. Within the context of Greater Surabaya, where competition among brands is very intense, companies must emphasize delivering positive customer experiences and building long-term relationships with consumers through strong customer service and effective marketing strategies [15].

Celebrity endorsement has become a popular marketing strategy in influencing consumer purchasing decisions, particularly in the beauty industry. Research indicates that the attractiveness, credibility, and expertise of celebrity endorsers play an important role in shaping consumers' positive perceptions of a product [16]. These factors can increase consumer confidence in making purchases, especially when the celebrity is aligned with the brand's image. However, the influence of celebrity endorsement on purchase decisions is often mediated by other variables, such as consumer trust or brand image, which strengthen the relationship between endorsement and purchasing behavior [17]. Celebrity endorsement also affects consumer satisfaction, although its impact is often indirect. Consumers tend to feel more satisfied when they perceive alignment between the product they purchase and the image of the celebrity promoting it. This perception enhances the value of their consumption experience. Thus, celebrity endorsement not only serves to drive initial purchases but also creates positive experiences that increase consumer satisfaction and brand loyalty [18]. In addition to celebrity endorsement, online customer reviews are also among the key factors influencing purchasing decisions. Research by [19] shows that online customer reviews have a positive and significant effect on consumer satisfaction. Similar findings were reported by [20], which stated that online reviews can significantly enhance consumer satisfaction. Positive reviews help shape consumer expectations regarding product quality, and when these expectations are met, they lead to higher satisfaction. Conversely, negative reviews highlighting product shortcomings tend to make consumers more cautious in their purchasing decisions. Credible and detailed reviews have a positive impact by building trust, fostering a sense of security, and reinforcing the perception that the purchased product is worth the cost. According to [21], online customer reviews influence purchase decisions due to their perceived capacity to provide a clear picture of the strengths and weaknesses of beauty products. Furthermore, [22] found that consumer satisfaction has a positive and significant effect on purchase decisions. This aligns with the idea that satisfied consumers are more likely to repurchase a product and remain loyal, whereas dissatisfied consumers tend to reconsider future purchases. Therefore, both celebrity endorsement and online customer reviews play important roles in shaping consumer perceptions and experiences, ultimately influencing satisfaction and loyalty toward a brand.

Advertisements or promotions featuring celebrities as endorsers across various media platforms ranging from print and social media to television have a significant impact on purchase decisions. Research by [23] states that celebrity endorsement has a positive and significant effect on purchasing decisions. In addition, online customer reviews also play a role in influencing consumer decisions. Online reviews can increase

consumer confidence in purchasing products, as they provide trials and testimonials from other consumers [24]. Beyond influencing purchase decisions, celebrity endorsement also impacts consumer satisfaction. Consumers tend to feel more satisfied when a celebrity endorses the product they have purchased, as it provides validation that strengthens consumer trust [25]. This creates higher satisfaction compared to products not supported by celebrities. On the other hand, [20] found that online customer reviews also affect consumer satisfaction levels; the more positive the reviews, the higher the consumer satisfaction. However, some studies argue that online customer reviews do not significantly affect satisfaction, as satisfaction may depend more on service quality and other factors rather than reviews alone [26][27]. Research by [28] further suggests that brand loyalty and credibility have a stronger impact on consumer satisfaction than celebrity endorsements, particularly in cosmetic products. Similarly, other studies conclude that online customer reviews do not necessarily influence purchase decisions, as prior reviews may not always lead to increased purchases [29], and product quality and promotional strategies may play a more decisive role than consumer reviews [30].

Based on the phenomena and research gaps outlined above, this study formulates several key research problems, namely: how celebrity endorsement and online customer reviews influence purchase decisions and consumer satisfaction in the beauty industry of Greater Surabaya. In addition, this research also focuses on how consumer satisfaction acts as a moderating variable in the relationship between celebrity endorsement and online customer reviews toward purchase decisions. Therefore, the purpose of this study is to analyze the extent to which celebrity endorsement and online customer reviews affect both purchase decisions and consumer satisfaction, as well as to examine the role of consumer satisfaction as a moderating variable that strengthens the relationship between the two and purchase decisions. Furthermore, this research supports Sustainable Development Goal (SDG) 12, Responsible Consumption and Production, by emphasizing the importance of responsible purchasing decisions based on credible information from endorsements and online reviews (UN SDGs, 2024).

The selection of the title '**The Influence of Celebrity Endorsement, Online Customer Reviews, and Purchase Decisions on Consumer Satisfaction in the Beauty Industry of Greater Surabaya**' is based on several considerations. First, the widespread use of celebrities as endorsers and the growing role of online reviews in influencing consumer behavior make this topic highly relevant to the current development of digital marketing strategies. Second, previous research findings remain inconsistent, thus highlighting the importance of this study in providing empirical clarity regarding the relationships among these variables. Third, the focus on Greater Surabaya was chosen because the region represents one of the key growth centers of the beauty industry in Indonesia, presenting complex dynamics of competition and consumer preferences. For these reasons, this study is expected to provide practical contributions for beauty companies in formulating effective marketing strategies, while also enriching the academic literature in the fields of marketing and consumer behavior.

Celebrity Endorsement

In order to increase the sales of company-supported products and services and to make products more appealing, current product marketing strategies frequently employ paid celebrity endorsements.

The term 'celebrity endorser' refers to a group of individuals in electronic advertising who have accumulated at least 10,000 Instagram followers [27]. A credible celebrity endorser is someone who can be trusted, possesses specific expertise, and has adequate knowledge about the product, so that their positive image can positively influence the advertised product [31]. The impact of celebrity endorsement is often rapid in influencing brand dimensions such as brand awareness, brand association, perceived quality, and brand loyalty [32]. According to the literature, there are three key indicators of celebrity endorsement:

1. **Attractiveness** – The ability of an endorser or influencer to draw attention and be liked by consumers, whether through physical appearance, style, or the persona they present. This attractiveness can enhance positive impressions of the promoted product.
2. **Trustworthiness** – The level of consumer trust or confidence in the integrity, honesty, and credibility of the endorser or information source. The higher the trust, the greater the likelihood that consumers will accept the message and make a purchase.
3. **Expertise** – The level of ability, knowledge, and competence an endorser possesses in a particular field, which makes consumers believe that the product they promote has the appropriate quality.

Online Customer Review

Online customer reviews are a decision-support tool and a recommendation system for online purchasing platforms [24]. One of the most common features in various marketplace applications is the Online Customer Review (OCR). Consumers who have purchased a certain product can share their experiences regarding its benefits, allowing potential buyers to gather information from these reviews. OCR can enhance consumer trust and provide valuable information for prospective buyers. Positive reviews tend to strengthen brand image and purchase intention, while negative reviews may reduce buying interest. In addition, OCR functions as a channel of communication between consumers and producers, enabling companies to obtain direct feedback and improve the quality of their products or services [33]. Recognizing the importance of online customer reviews, the author decided to examine this topic further. Online Customer Reviews (OCR) represent a form of word-of-mouth communication in online sales. Prospective consumers receive information about a product from previous buyers who have experienced its benefits. Unlike advertisements, reviews provide direct opinions from individuals, emphasizing their role as part of Electronic Word of Mouth (e-WOM) [13]. According to [33], there are four key indicators of online customer reviews:

1. Reading customer reviews to gain insights into product impressions.
2. Ensuring the right product purchase by regularly reading customer reviews.

3. Collecting information from customer reviews to assist in selecting the appropriate product.
4. Utilizing reviews as one of the supporting factors for building trust in the product purchasing process.

Purchase Decision

A purchase decision refers to an individual's attitude toward buying or using a product, whether in the form of goods or services, that is perceived to provide satisfaction, accompanied by the willingness to take responsibility for the risks arising from that decision. In addition, purchase decisions are closely related to psychological factors, which strongly influence consumer buying behavior [34]. According to [35], purchase decision is a critical point in the marketing process, where potential buyers make the choice to either buy or not buy a product or service. There are four indicators of purchase decisions:

1. Purpose of purchasing a product. The reasons or motives behind a consumer's decision to buy a product; these include utilitarian, hedonic, social, safety, and other motives. This indicator evaluates whether consumers purchase due to need, status, emotional satisfaction, function, or other reasons [34].
2. Confidence in a product. The degree of consumer assurance that the chosen product is the best option; this includes the consumer's level of certainty in the decision, as well as their willingness to accept risks or uncertainties [36].
3. Recommending to others. The consumer's willingness and tendency to recommend the product to friends, family, or other audiences; this serves as an indicator of consumer satisfaction and readiness to act as a "promoter" of the product, either verbally or online [37].
4. Repeat purchase. The intention or behavior of consumers to repurchase the same product in the future, reflecting long-term loyalty and sustained satisfaction [38].

Consumer Satisfaction

Consumer satisfaction refers to the level of satisfaction felt by consumers after purchasing or using a product. Consumers who are satisfied with a product are more likely to become loyal customers, as the product meets their expectations [22]. Consumer satisfaction is closely related to the quality of a product or service in fulfilling consumer desires. Thus, product or service performance must align with consumer expectations in order to create satisfaction. Conversely, if the performance fails to meet expectations, consumers will experience dissatisfaction. According to [39][40][41], the indicators of consumer satisfaction include:

1. Overall customer satisfaction. The overall level of satisfaction experienced by consumers with the product or service after usage. This includes a general evaluation of whether the experience exceeded, met, or fell short of their expectations.
2. Dimensions of customer satisfaction. Specific aspects of the product or service that form the basis of satisfaction evaluation, such as quality, service, price, features, ease

- of use, and reliability. These dimensions help identify which factors play a greater role in influencing overall satisfaction.
3. Confirmation of expectations. The extent to which the product or service meets or confirms the consumers' pre-existing expectations.
 4. Repurchase intention. The tendency or willingness of consumers to buy the same product or service again in the future after a satisfying prior experience, indicating loyalty and trust in the product.
 5. Willingness to recommend. The willingness of satisfied consumers to recommend the product or service to others (family, friends, or the general public). This may take the form of direct word-of-mouth or online reviews/comments.
 6. Customer dissatisfaction. Negative feelings that arise when the product or service is perceived as failing to meet consumer expectations. This can occur when performance is far below expectations, due to errors, poor experiences, or unsatisfactory aspects.

RESEARCH METHOD

This study aims to analyze the influence of Celebrity Endorsement (CE) and Online Customer Review (OCR) on Purchase Decision (PD), with Consumer Satisfaction (CS) as a moderating variable, in the beauty industry within the Greater Surabaya area (including Surabaya, Gresik, Bangkalan, Mojokerto, Sidoarjo, and Lamongan). The research employed a quantitative approach with a survey method. The population of this study consisted of consumers in Greater Surabaya who use beauty products. The sampling technique used was purposive sampling, where respondents were selected based on specific criteria: consumers aged at least 17 years, residing in Greater Surabaya, having prior experience using Scarlett Whitening products, and being exposed to celebrity endorsements as well as online customer reviews.

To determine the sample size, the Lemeshow formula was applied with a 95% confidence level and a 10% margin of error. The calculation resulted in 96.04 respondents, which was then rounded up to 100 respondents to ensure research feasibility, as the minimum sample size for quantitative research is around 100 respondents. The data used in this study consisted of primary and secondary data. Primary data were obtained through online questionnaires (Google Forms) distributed to 100 respondents. The research instrument employed a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree, to measure the indicators of celebrity endorsement, online customer reviews, consumer satisfaction, and purchase decisions. Secondary data were obtained from literature, books, articles, scientific journals, and official documents related to the beauty industry.

The data analysis was conducted using SmartPLS 4.1 (2025). The analysis stages included: (1) convergent and discriminant validity tests to examine the suitability of indicators; (2) reliability testing using Cronbach's Alpha and Composite Reliability; (3) R-Square (R^2) testing to determine the contribution of independent variables to dependent variables; and (4) hypothesis testing using t-statistics and p-values in the

structural model (inner model). Through this approach, the study is expected to provide valid empirical evidence regarding the relationships among celebrity endorsement, online customer reviews, purchase decisions, and consumer satisfaction in the beauty industry of Greater Surabaya.

RESULTS AND DISCUSSION

Results

Based on the distribution of the questionnaires, the characteristics of the respondents are described as follows. The majority of respondents are female, namely 85 respondents (85%), while male respondents are 15 respondents (15%) out of a total of 100 respondents. In terms of age group, respondents aged 17–21 years amounted to 30%, respondents aged 22–26 years dominated with 57%, while respondents aged 27–31 years were 13%. In terms of status, most respondents are students, namely 84%, while the remaining 16% are workers. All respondents in this study are consumers of beauty products originating from the Greater Surabaya area.

Measurement Model Calculation (Outer Model)

According to [42], in the outer model test, reflective indicators in the PLS-SEM model should have an outer loading value of at least 0.70 to be declared as having adequate convergent validity. This threshold is chosen because a value of 0.70 indicates that about 50% of the variance of the indicator can be explained by the latent construct. Meanwhile, a higher outer loading value, for example above 0.80, shows better measurement quality and a lower error rate. However, in exploratory research, indicators with an outer loading slightly below 0.70 can still be retained if their theoretical relevance is strong and the overall construct reliability still meets the criteria.

Validity Test

Table 1. Loading Factor.

Indicator	Celebrity Endorsement	Online Customer Review	Purchase Decision	Customer Satisfaction
CE1	0.871			
CE2	0.830			
CE3	0.704			
OCR1		0,801		
OCR2		0.786		
OCR3		0.935		
OCR4		0.789		
KP1			0.745	
KP2			0.783	
KP3			0.816	
KP4			0.839	
KK1				0.756
KK2				0.933
KK3				0.941

Indicator	Celebrity Endorsement	Online Customer Review	Purchase Decision	Customer Satisfaction
KK4				0.723

Source: Processed data using Smart PLS 4.1 (2025)

Based on the results of the measurement model test (outer model), all indicators on the constructs of Celebrity Endorsement, Online Customer Review, Purchase Decision, and Customer Satisfaction have loading factor values of ≥ 0.70 , which means that all indicators are considered convergently valid according to the standards commonly used in the PLS-SEM literature [42][43].

Discriminant Validity Test

Table 2. Cross Loading Test Results.

	CE	OCR	KP	KK
Celebrity Endorsement (CE)		0.830		
Online Customer Review (OCR)	0.677	0.887		
Keputusan Pembelian (KP)	0,641	0,797	0,870	
Kepuasan Konsumen (KK)	0,562	0,487	0,745	0,756

Source: Processed data using Smart PLS 4.1 (2025)

Based on the results of the cross-loading test (Table 2), it can be seen that each construct has the highest loading value on its own indicators. The Celebrity Endorsement (CE) construct has a value of 0.830, Online Customer Review (OCR) 0.887, Purchase Decision (PD) 0.870, and Customer Satisfaction (CS) 0.756. These values are higher compared to their cross-loadings on other constructs, indicating that each indicator represents its original construct better than the other constructs. This research model meets the discriminant validity criteria, meaning that the indicators used truly measure their respective constructs. This result is consistent with the criteria proposed by [44], which states that cross-loading is an important method for assessing discriminant validity, where indicators must show a higher correlation with their own construct than with other constructs.

Reliability Test

Table 3. Composite Reliability, Cronbach Alpha Test, and Average Variance Extracted.

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Celebrity Endorsement (CE)	0.722	0.722	0.846	0.648

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Online Customer Review (OCR)	0.848	0.890	0.907	0.712
Keputusan Pembelian (KP)	0,807	0,809	0,874	0.634
Kepuasan Konsumen (KK)	0,868	0,939	0,898	0.689

Source: Processed data using Smart PLS 4.1 (2025)

Based on Table 3, all constructs show Cronbach's Alpha and rho_A values above 0.70, Composite Reliability above 0.80, and AVE above 0.50. These results indicate that the indicators within each construct have high internal reliability and good convergent validity. This assessment aligns with the guidelines provided by [45], which state that the common reliability threshold is ≥ 0.70 and $AVE \geq 0.50$. Furthermore, the use of rho_A follows the recommendation of [46] to ensure measurement consistency in the Smart PLS model.

Multicollinearity Test

Table 4. VIF Values Results.

Indicator	Celebrity Endorsement	Online Customer Review	Buying decision	Customer Satisfaction
Celebrity Endorsement (CE)				1.176
Online Customer Review (OCR)				1.792
Keputusan Pembelian (KP)				1.456
Kepuasan Konsumen (KK)				1.947

Source: Processed data using Smart PLS 4.1 (2025)

The results of the multicollinearity test in Table 4 show that all constructs have VIF values below 2. These values are well below the recommended threshold of 5 [44] and also below the more conservative limit of 3.3 proposed by [47]. It can be concluded that there are no multicollinearity issues in the structural model of this study.

Structural Model Analysis (Inner Model)

According to [45], in the context of using SmartPLS, this stage involves the evaluation of the structural model, focusing on testing the relationships between latent constructs. This evaluation includes measuring the predictive quality of the model, which is generally assessed through the coefficient of determination (R^2), predictive relevance (Q^2), and effect size (f^2). The R^2 value indicates how much of the variance in the

endogenous construct can be explained by the exogenous constructs. [42] categorizes R^2 values of 0.75 as substantial, 0.50 as moderate, and 0.25 as weak. The higher the R^2 and Q^2 values, the better the predictive capability of the structural model built using SmartPLS. Therefore, the inner model test assesses the extent to which the structural model tested with SmartPLS can predict endogenous constructs based on the exogenous constructs that influence them.

R-square Test

Table 5. R-square Test Results.

	R-square
Kepuasan Konsumen (KK)	0.818

Source: Processed data using Smart PLS 4.1 (2025)

Based on Table 5, the R^2 value for the Customer Satisfaction (CS) construct is 0.818. This value indicates that 81.8% of the variation in Customer Satisfaction can be explained by the exogenous constructs in the model, namely Celebrity Endorsement, Online Customer Review, and Purchase Decision. The remaining 18.2% is influenced by factors outside the model. Referring to the guidelines of [45], an R^2 value above 0.75 is categorized as substantial, indicating that the structural model of this study has very good predictive capability for Customer Satisfaction.

F-square Test

Table 6. F-square Test Results.

Indicator	Celebrity Endorsement	Online Customer Review	Buying decision	Customer Satisfaction
Celebrity Endorsement (CE)				0.079
Online Customer Review (OCR)				0.456
Keputusan Pembelian (KP)				0.209
Kepuasan Konsumen (KK)				

Source: Processed data using Smart PLS 4.1 (2025)

Based on the analysis using Smart PLS 4.1 shown in Table 6, the f-square (f^2) value for the relationship between Celebrity Endorsement (CE) and Customer Satisfaction (CS) is 0.079. This value is above the minimum threshold of 0.02 but below 0.15, indicating that the effect of Celebrity Endorsement on Customer Satisfaction falls into the small category. Furthermore, the f-square value for Online Customer Review (OCR) on Customer Satisfaction (CS) is 0.456. This value exceeds the 0.35 threshold, classifying it as a large effect, meaning that online customer reviews contribute significantly to increasing customer satisfaction. Meanwhile, the f-square value for Purchase Decision (PD) on Customer Satisfaction (CS) is 0.209. This value falls within the range of $0.15 \leq f^2 < 0.35$, indicating that the effect of Purchase Decision on Customer Satisfaction is in the moderate category. Referring to the criteria of [42] and [45], these results show that the

Online Customer Review variable has the strongest effect on Customer Satisfaction, followed by Purchase Decision, while Celebrity Endorsement has the smallest effect.

Hypothesis Test (Bootstrapping)

Table 7. Path Coefficients (Bootstrapping).

Indicator	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Celebrity Endorsement (CE) → Kepuasan Konsumen (KK)	0.057	0.059	0.056	1.020	0.308
Online Customer Review (OCR) → Kepuasan Konsumen (KK)	0.359	0.361	0.084	4.268	0.000
Keputusan Pembelian (KP) → Kepuasan Konsumen (KK)	0.546	0.546	0.082	6.692	0.000

Source: Processed data using Smart PLS 4.1 (2025)

Based on the results of the bootstrapping analysis using Smart PLS 4.1 presented in Table 7, the path coefficients, T-statistics, and P-values are as follows:

1. Celebrity Endorsement (CE) → Customer Satisfaction (CS)

The path coefficient is 0.057, the T-statistic is 1.020 (<1.96), and the P-value is 0.308 (>0.05).

This indicates that Celebrity Endorsement does not have a significant effect on Customer Satisfaction.

2. Online Customer Review (OCR) → Customer Satisfaction (CS)

The path coefficient is 0.359, the T-statistic is 4.268 (>1.96), and the P-value is 0.000 (<0.05).

This means that Online Customer Review has a positive and significant effect on Customer Satisfaction.

3. Purchase Decision (PD) → Customer Satisfaction (CS)

The path coefficient is 0.546, the T-statistic is 6.692 (>1.96), and the P-value is 0.000 (<0.05).

This indicates that Purchase Decision also has a positive and significant effect on Customer Satisfaction.

Referring to [45], a T-statistic >1.96 and a P-value <0.05 indicate a significant relationship between variables. Therefore, the hypotheses stating that Online Customer Review and Purchase Decision have a positive effect on Customer Satisfaction are supported, while the hypothesis regarding the effect of Celebrity Endorsement on Customer Satisfaction is rejected.

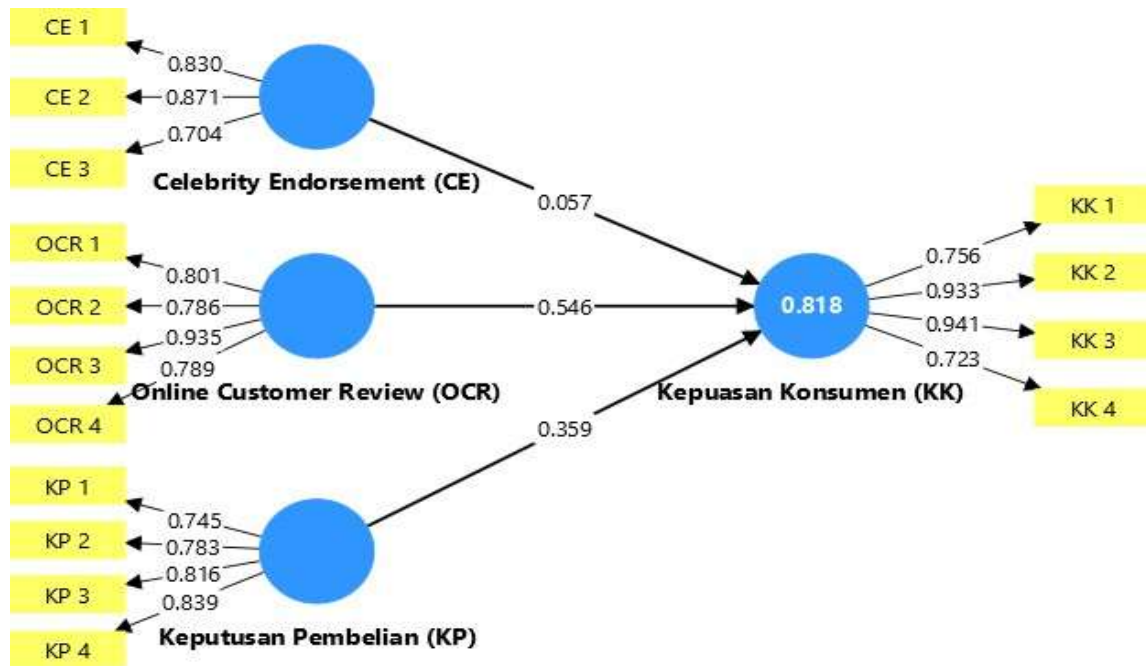


Figure 2. Bootstrapping Test Result.

Source: Processed data using Smart PLS 4.1 (2025)

Discussion

Based on the results of the bootstrapping analysis using SmartPLS 4.1 (Table 8), three main findings were obtained: (1) Online Customer Review (OCR) has a positive and significant effect on Customer Satisfaction (CS) ($\beta = 0.359$; $t = 4.268$; $p < 0.001$); (2) Purchase Decision (PD) has a positive and significant effect on CS ($\beta = 0.546$; $t = 6.692$; $p < 0.001$); and (3) Celebrity Endorsement (CE) does not have a significant effect on CS ($\beta = 0.057$; $t = 1.020$; $p = 0.308$). These findings are supported by the evaluation of the inner and outer models: the instruments are reliable and valid (loading ≥ 0.70 ; AVE ≥ 0.50 ; high CR), there is no disruptive multicollinearity (VIF < 5), and the R^2 of CS is 0.818, indicating substantial predictive capability of the model.

The interpretation of the results shows a clear pattern: online customer reviews (OCR) are a strong source of information and directly affect satisfaction because they serve as verification of actual user experiences; meanwhile, celebrity endorsements in this study tend to contribute only minimally to direct customer satisfaction. These findings are consistent with the literature, which indicates that the effect of CE often depends on context and mediating mechanisms such as brand image, perceived product quality, or purchase decision, so the influence of CE on satisfaction can be indirect or mediated [48][49][50]. Theoretically, this can be explained as follows. Celebrities play a role in generating attention, brand awareness, and positive associations (top-of-mind), thus potentially increasing purchase intentions or initial product perceptions. However, customer satisfaction ultimately depends on the actual usage experience and whether the product meets expectations, which is more directly conveyed through peer reviews (OCR). Therefore, although celebrities can drive initial interest, consumption outcomes

(satisfaction) are more influenced by empirical evidence from other users' experiences, explaining why OCR shows a stronger and more direct effect in this model [51][52].

Furthermore, several empirical studies have found similar patterns: celebrity endorsements often show a significant effect on purchase intention or brand image, but the direct effect on customer satisfaction is weaker or depends on mediators (e.g., purchase decision, product quality) [49][50]. For example, [49] (beauty industry study) reported that CE affects satisfaction through the paths of purchase decision and product quality, not just direct influence [53]. Other studies found that in contexts where consumers rely heavily on social proof, online reviews become the main determinant of satisfaction and repurchase decisions [51]. The practical implications of these findings are twofold. First, for beauty product marketers, investing in strategies to manage online reviews encouraging positive reviews, proactively responding to negative reviews, and facilitating user-generated content can have a direct and strong impact on customer satisfaction. Second, if using celebrities, companies should ensure that the celebrity's role is synergized with evidence of quality (e.g., testimonials, trials, social proof) or directed to strengthen brand image or perceived quality, because CE alone is likely insufficient to increase post-purchase satisfaction. Methodologically, the results also highlight the importance of testing mediation paths (e.g., CE → PD → CS or CE → Brand Image → CS) and moderators (e.g., product type, consumer segment) in future research).

CONCLUSION

Fundamental Finding : Based on the results of this study, it can be concluded that Online Customer Review (OCR) has a positive and significant effect on Customer Satisfaction (CS). This indicates that online customer reviews play an important role in building trust, shaping expectations, and enhancing post-purchase satisfaction. Purchase Decision (PD) is also proven to have a positive and significant effect on CS, meaning that the stronger consumers are in making product choices, the higher the satisfaction they experience. In contrast, Celebrity Endorsement (CE) does not show a significant effect on CS, indicating that celebrity support does not automatically increase post-purchase satisfaction, although it remains relevant for building brand awareness and initial purchase interest. Overall, the research model has substantial predictive capability, with an R² value of 0.818, confirming that the combination of CE, OCR, and PD can strongly explain the variation in customer satisfaction. **Implication :** Theoretically, this study reinforces the understanding that customer satisfaction in the beauty industry is more determined by actual experiences and social proof from fellow users rather than celebrity promotion. This aligns with literature emphasizing the importance of online reviews as a form of credible electronic word-of-mouth that directly affects satisfaction and loyalty. Practically, these findings imply that beauty companies need to focus on strategies for managing customer reviews, fostering positive interactions on digital platforms, and enhancing the quality of product usage experiences to create satisfaction and long-term customer retention. Meanwhile, the use of celebrities should be directed to strengthen brand image rather than serve as a primary factor in driving customer satisfaction.

Limitation : This study is limited to respondents who are users of Scarlett Whitening products in the Greater Surabaya area, so the generalization of findings may not fully represent other brands or regions. Additionally, the study focuses only on three variables—CE, OCR, and PD—while other factors such as brand trust, perceived value, and product innovation may also influence customer satisfaction but were not included in this model. **Future Research :** Future studies are encouraged to expand the research scope by involving different product categories, geographic areas, and additional mediating or moderating variables. Researchers may also consider employing longitudinal designs to observe changes in consumer behavior and satisfaction over time, particularly in response to evolving digital marketing trends and social media dynamics in the beauty industry.

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