
Multidimensional Analysis of Overall Service Quality in Aesthetic Clinics as a Predictor of Recommendation Intentions

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Abstract:

This study investigates the impact of overall service quality on patient satisfaction and their intention to recommend aesthetic clinics, emphasizing the role of six quality dimensions measured as a higher-order construct (HOC). Understanding the influence of comprehensive service quality is crucial in aesthetic clinics, where patients seek more hedonic experiences rather than medical treatment. A survey was conducted among patients visiting aesthetic clinics, and Partial Least Squares - Structural Equation Modeling (PLS-SEM) with a disjoint two-stage approach was used to examine the relationships between the six reflective dimensions of service quality as lower order construct (LOC), namely technical, procedural, interactional, personnel, infrastructural, and social support with the outcomes of patient satisfaction and intention to recommend. The findings reveal the dimensionality of the service quality model in the aesthetic clinic context. In particular, overall service quality, measured as HOC, significantly influences patient satisfaction, which in turn positively affects the intention to recommend. Among the dimensions, technical quality and social support were critical in shaping patient perceptions and driving satisfaction. The model demonstrates robust explanatory and predictive power, with an R^2 value of 0.745 and Q^2 predict of 0.679 for intention to recommend. A cross-validated predictive ability test confirms the model's predictive accuracy. Novel to this research is the comprehensive inclusion of quality dimensions, reflecting the complexity of service delivery in aesthetic clinics. The disjoint two-stage approach provides enhanced insights into the relative contributions of LOCs, highlighting technical quality, social support quality, and interactional quality as critical drivers of overall service quality. These findings offer actionable recommendations for managers to optimize service quality and encourage clinic recommendations.

Keywords: Overall Service Quality, Aesthetic Clinics, Intention to Recommend, Higher Order Construct

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1. Introduction

industries worldwide (Nguyen et al., 2020; Singhal et al., 2022). As technology in cosmetic and aesthetic procedures advances, more consumers are seeking non-surgical and minimally invasive treatments to enhance their appearance (Bonell et al., 2022; Devgan et al., 2019). This shift has transformed the way healthcare providers approach patient care, particularly in aesthetic clinics. Unlike traditional medical services focused on disease treatment, aesthetic services are driven by personal enhancement and self-image, catering to a consumer base motivated by hedonistic desires for beauty and personal satisfaction (Ferdinand & Ciptono, 2022). This research investigates the role of service quality in shaping patient satisfaction and the

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intention to recommend aesthetic clinics, with a specific focus on the clinic's image and key service dimensions such as technical quality and social support.

As the aesthetic services market grows, competition among clinics becomes more intense. Clinics are increasingly required to differentiate themselves not just through the technical quality of their services but also by creating an exceptional service experience that resonates with patients' desires for personal improvement and emotional fulfilment (Octaviani et al., 2023). By understanding the factors contributing to patient satisfaction in aesthetic clinics, this study provides valuable insights that can help clinics enhance their service offerings and build stronger patient relationships. Currently, researchers often focus primarily on functional quality in service delivery, emphasizing aspects such as customer interaction, service process, and staff behavior (Nguyen et al., 2020). However, the technical quality, which refers to the actual outcomes or results of the service, is frequently overlooked. This imbalance neglects the crucial role that the effectiveness and tangible results of the service play in shaping customer satisfaction and loyalty (Dickons, 2016; Diaz et al., 2023).

Existing studies on service quality in healthcare primarily address traditional medical services, where patients seek to cure or manage medical conditions (Cotofana et al., 2022). In these settings, the focus is on clinical outcomes, treatment efficacy, and the competence of healthcare professionals (Chen et al., 2020). However, aesthetic clinics cater to a different kind of patient, one motivated by personal desires for appearance improvement rather than medical necessity. Unlike patients in hospitals who prioritize health recovery, patients in aesthetic clinics often seek experiences that align with individual well-being and aesthetic enhancement, which are more hedonistic in nature (Zeithaml et al., 2009). Despite the growing importance of aesthetic healthcare (Cotofana et al., 2022) there is a lack of studies exploring how different dimensions of service quality, such as technical expertise and interpersonal care, affect patient satisfaction and their likelihood to recommend the clinic. This study addresses this gap by focusing on the unique nature of aesthetic services, where patients are not seeking to recover from illness but are instead motivated by a desire for self-enhancement and pleasure.

Intention to recommend is crucial for long-term business performance in aesthetic clinics, as it directly influences customer loyalty, repeat business, and organic growth through word-of-mouth. Especially in this era when consumers look at online reviews on the internet before deciding (Alghonaim et al., 2019). In a highly competitive market driven by personal enhancement services, patient recommendations are more impactful than traditional marketing, providing a credible and cost-effective means to attract new clients (Lin et al., 2022). A strong intention to recommend reflects high service satisfaction and emotional fulfilment, which not only boosts the clinic's reputation but also fosters patient retention and brand loyalty (Dickons, 2016; Dio et al., 2023). Therefore, measuring this variable is vital for assessing overall service quality and predicting future business success, as it contributes to sustainable growth and a competitive edge in the aesthetic industry.

This study aims to answer the three key research questions: First, how do the dimensions of service quality, including technical quality and social support, influence patient satisfaction in aesthetic clinics? Second, what role does the overall service quality and clinic image play in shaping a patient's intention to recommend the clinic to others? Lastly, how can the integration of technical and functional quality elements within the service delivery process enhance the patient experience, especially in the context of the hedonistic motivations driving patients to seek aesthetic treatments? These questions will be addressed through the proposed model, which combines both objective service outcomes and subjective patient experiences to provide a comprehensive understanding of the factors influencing patient satisfaction and loyalty in aesthetic clinics.

To address the research question, the model proposed in this study offers a new approach to understanding patient satisfaction in aesthetic clinics. While previous research on service quality has largely focused on healthcare services that treat illness or injury (Swain & Singh, 2021), aesthetic clinics operate in a different sphere where the service outcome is more subjective and based on personal expectations related to beauty and well-being (Octaviani et al., 2023). This distinction is important because it shifts the focus from healthcare outcomes to service experience, where emotional satisfaction and perceptions of self-image play crucial roles in shaping patient behaviors. Aesthetic patients are often motivated by hedonistic desire, seeking experiences that make them feel good about their appearance and improve their sense of self-esteem (Fook et al., 2024; Ferdinand & Ciptono, 2022). As a result, the quality of service provided by the clinic, including both technical competence and emotional support, significantly impacts the likelihood of patient satisfaction and their intention to recommend the clinic to others (Handini & Antonio, 2023).

The key contribution of this research is the identification of various qualities as a critical dimension of service quality in aesthetic clinics, which has been largely overlooked in previous studies focused on more traditional healthcare settings. By integrating both technical and functional aspects of service quality as recommended (Apostol & Matchimura, 2024), this research offers a comprehensive framework. Thus can contribute to the broader understanding of service quality in healthcare settings and offer practical recommendations for improving patient satisfaction and clinic performance in the competitive aesthetic healthcare market.

2. Theoretical Background

This research draws upon the Service Quality Model proposed by Grönroos (1984), which distinguishes between technical quality (the outcome of the service) and functional quality, as the process through which the service is delivered (Parasuraman et al., 1994). In the context of aesthetic clinics, technical quality refers to the medical expertise and competence of the clinic's staff, while functional quality encompasses the overall experience, including social support, empathy, and the clinic's atmosphere (Woo & Choi, 2021). This dual approach addresses both the tangible results of aesthetic treatments, such as skin improvement or facial rejuvenation (technical

quality), and the intangible aspects, such as the patient's experience, communication, and the emotional comfort they feel during their visit as known as functional quality (Apostol & Matchimura, 2024).

In aesthetic clinics, where clients are often motivated by hedonistic goals, the outcome's effectiveness is as crucial as the experience during the service (Octaviani et al., 2023). The combination of these two dimensions provides a more comprehensive understanding of patient satisfaction and intention to recommend, capturing the full spectrum of what influences client loyalty and clinic reputation (Brady & Cronin, 2001). This conceptual framework is especially important in the aesthetic industry, where both the emotional experience and tangible outcomes significantly affect client perceptions and decisions to recommend the clinic to others. This is important as an effective promotional tool because it is considered authentic based on sources who have experienced it themselves.

Measuring overall service quality through the six dimensions outlined in Swain and Kar (2018) is particularly effective as it provides a comprehensive framework that integrates both functional and technical aspects of service quality (Brady & Cronin, 2001). This approach captures the diverse factors influencing customer experience (Swain & Singh, 2021), such as service environment, staff behavior, reliability, responsiveness, and the tangible results of the service provided. The 6Q model, originally designed for hospital settings, can be effectively adapted for aesthetic clinics by emphasizing the specific needs of the beauty service industry, such as the importance of outcome-oriented services like Botox, fillers, and laser treatments. By incorporating elements such as customer perception of results and specialized technical expertise, the 6Q framework offers a well-rounded measurement of overall service quality, addressing both the process and outcome dimensions critical to client satisfaction in beauty treatments. This adaptation enhances the ability to assess and improve service quality in aesthetic clinics, aligning with the hedonistic motivations of clients seeking aesthetic enhancement.

The overall service quality is often treated as a unidimensional construct in many studies, but this approach oversimplifies the complexity of the concept, as service quality itself is inherently multi-dimensional (Endeshaw, 2020). The service quality framework, especially in healthcare or aesthetic clinics, involves multiple facets, such as functional, technical, and environmental aspects, each contributing differently to a patient's overall experience (Gronroos, 1984; Kang & James, 2004). A unidimensional view fails to capture the nuanced differences in these dimensions, potentially overlooking critical aspects of patient satisfaction and service delivery (Duggirala et al., 2008; Fatima et al., 2019). Therefore, a more appropriate approach is to treat service quality as a hierarchical construct with reflective dimensions. Using a hierarchical component model allows for a better understanding of the relationships between different quality dimensions and their impact on overall service quality, as well as how these dimensions independently and collectively influence patient outcomes, such as satisfaction and intention to recommend. This approach offers several advantages, including a more accurate measurement of service quality, the

ability to identify key areas for improvement, and a deeper insight into the interdependencies between various quality factors (Swain & Singh, 2021).

In the context of aesthetic clinics, patient satisfaction remains a cornerstone concept in service quality research. Although the concept of patient satisfaction has been widely studied and applied across various healthcare sectors, it remains highly relevant in aesthetic clinics due to the hedonistic and outcome-driven nature of the services provided. Unlike traditional medical services aimed at curing illness, aesthetic treatments focus on enhancing personal appearance, which is intrinsically linked to emotional and psychological outcomes (Bonell et al., 2022). In this setting, satisfaction is not merely about functional service delivery but also about perceived results, self-esteem improvement, and overall experience (Marcela et al., 2017).

Despite being a well-established concept, patient satisfaction is still one of the most direct indicators of customer loyalty and future intentions, such as the intention to recommend the clinic, which is vital for long-term business success (Handini & Antonio, 2023; Munawaroh et al., 2021). Other constructs, like customer engagement, may be influenced by a variety of external factors, but patient satisfaction directly reflects the client's personal experience with the service, making it a powerful predictor of both repeat visits and positive word-of-mouth (Park et al., 2022). Therefore, in aesthetic clinics, where client expectations are high, and results are visual and psychological, the concept of patient satisfaction is irreplaceable and continues to be a relevant and critical construct to measure overall service quality.

Gronroos' service quality framework (1984) which integrates both functional and technical aspects of service, underpins this hypothesis by suggesting that higher overall service quality, which includes dimensions like professionalism, expertise, and outcome quality, leads to increased patient satisfaction (Kang & James, 2004). In the context of aesthetic clinics, where patients' expectations are driven by both the process and outcome of treatments, it is critical that functional service (e.g., communication, empathy) and technical quality (e.g., expertise, results) are seamlessly delivered to enhance satisfaction (Chen et al., 2023; Swain & Singh, 2021). In a study by Swain and Kar (2018), the dimensionality of health care service was divided into six dimensions as follows: Technical quality pertains to the clinical and procedural precision of services. Procedural quality reflects the adherence to standard operating procedures. Interactional quality captures the interpersonal skills of healthcare staff. Personnel quality relates to the competence and professionalism of the staff. Infrastructural quality encompasses the physical facilities and resources available. Social support quality: measures the extent of emotional and informational support provided.

The previous studies suggest that higher Overall Service Quality (HOC) is positively related to the intention to recommend, which is consistent with research in health care that shows satisfied customers are more likely to recommend a service to others (Handini & Antonio, 2023; Swain & Kar, 2018; Woo & Choi, 2021). This notion is supported by studies indicating that satisfied patients in aesthetic clinics not only return but also contribute to positive word-of-mouth, enhancing the clinic's reputation

and attracting new clients (Bidmon et al., 2020; Lin et al., 2022; Marcela et al., 2017). Therefore, the hypotheses in the healthcare context and aesthetic service domains can be proposed as follows.

H1: *Overall service quality positively influences patient satisfaction.*

H2: *Overall service quality positively influences the intention to recommend.*

Previous studies have consistently demonstrated that satisfied customers are more likely to recommend services to others, as their positive experiences lead to increased loyalty and advocacy (Chakraborty & Pandey, 2020; Batbaatar et al., 2016). In aesthetic clinics, where the treatment outcomes significantly influence patient perceptions, satisfaction is directly linked to both the quality of the procedure and the overall experience, including the professionalism of staff and clinic ambiance (Lin et al., 2022; Swain & Singh, 2021). The positive relationship between satisfaction and recommendation is critical in aesthetic services, where word-of-mouth and personal recommendations play a crucial role in attracting new clients (Choi & Lee, 2019). This concept is well-established in service quality literature, where satisfaction is considered a strong predictor of customer loyalty and intentions to recommend (Yahanda et al., 2015). Therefore, in the context of aesthetic clinics, it is reasonable to expect that patients who are highly satisfied with their treatments and service experience will be more inclined to recommend the clinic to others, contributing to its long-term success and reputation.

H3: *Patient satisfaction positively influences the intention to recommend*

Research has shown that service quality directly affects patient satisfaction, which, in turn, influences behaviors such as intention to recommend (Berry et al., 2020). In healthcare, including aesthetic clinics, patients' perceptions of service quality that comprise both functional and technical dimensions are crucial in shaping their overall satisfaction (Apostol & Matchimura, 2024). A satisfied patient is more likely to exhibit positive behavioral intentions, such as recommending the clinic to others (Handini & Antonio, 2023) as satisfaction acts as a mediator between service quality and patient loyalty (Lee et al., 2021). The mediation effect of patient satisfaction has been well-documented in the healthcare sector, suggesting that improving service quality enhances satisfaction, which consequently boosts recommendations (Amarat et al., 2022; Choi et al., 2020). In the context of aesthetic clinics, where customer experiences are often tied to both the emotional and outcome-driven aspects of service, patient satisfaction serves as a key mechanism for translating service quality into greater patient loyalty and advocacy (Yahanda et al., 2015). Therefore, this mediating pathway aligns with the established understanding that service quality, through satisfaction, enhances the likelihood of patients recommending the clinic.

H4: *Patient satisfaction mediates the positive influence of overall service quality on the intention to recommend*

Clinic brand image, as supported by empirical studies, plays a significant role in the relationship between service quality, patient satisfaction, and intention to recommend (Fook et al., 2024). Research has consistently shown that a strong, positive brand image enhances customer perceptions of service quality (Amarat et al., 2022; Cham et al., 2016), which in turn strengthens the effect of patient satisfaction on their

H6: Clinic image strengthening the influence of overall service quality on the intention to recommend

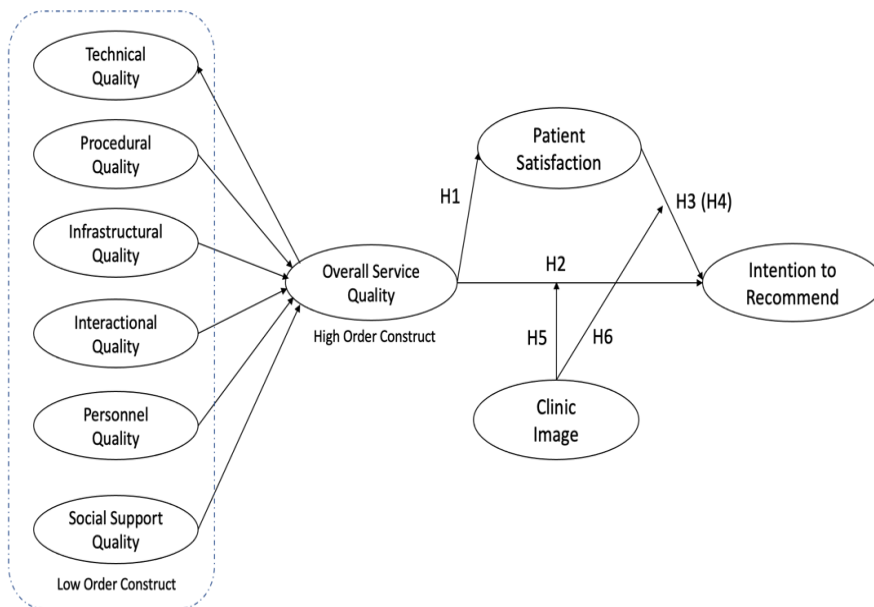


Figure 1. Conceptual Framework

3. Methodology

This research is causal-predictive research, with a survey method using a questionnaire instrument. The setting of this research was a leading beauty clinic located in Jakarta, where data was taken from consumers who had been patients at the six branches of the clinic. The target population is consumers who have undergone aesthetic treatment procedures in 2024 at least 3 times. Respondents were taken by purposive sampling with certain criteria such as being over 18 years old, not due to skin disease but for aesthetic purposes, and there were no side effects during the

treatment procedure. The minimum number of samples was determined by power analysis with 153 samples.

Variable measurement uses an interval scale with a 5-point Likert, starting from 1=strongly disagree to 5=strongly agree. Questionnaire items for the service quality dimension were adapted from Swain and Kar (2018), while clinic images were adapted from Cham et al. (2016). The questionnaire items were translated and tested for face validity by an expert panel consisting of three academics. The questionnaire instrument was distributed online and filled in by the respondents themselves.

This research places overall service quality as a higher-order construct (HOC), measured by its six reflective dimensions, which become a lower-order construct (LOCs). The hierarchical component offers benefits due to model complexity, and analysis was done using several methods (Sarstedt et al., 2019). Previously, Researchers mostly used repeated indicators because of their simplicity. However, in current developments, it is believed that the new process with disjoint two-stages is considered better (Becker et al., 2022). By this method, more precise validity check results are obtained because separate measurements can then be analyzed in a stage that includes LOC. Further, the disjoint two-stage approach provides a deeper analysis of the role of these dimensions

4. Empirical Findings/Result

The demographic profile of respondents in Table 1 provided information on the respondent base of this study in aesthetic clinics. From the results of distributing the questionnaire, it was obtained that 168 respondents met the requirements, exceeding the minimum of 153 required. Most participants were women (80%), reflecting the dominant demographic seeking aesthetic treatments. The largest age group was 18–29 years old (53%), followed by 30–39 years old (33%), indicating a strong preference for aesthetic services among younger adults. Educational attainment shows a high proportion of respondents with undergraduate degrees (48%), followed by high school graduates (30%), suggesting that aesthetic clinic patrons are predominantly well-educated. Regarding occupation, employees formed the largest category (68%), followed by students (15%) and housewives (8%), highlighting the appeal of these clinics to working individuals and young adults. The presence of entrepreneurs, artists/influencers, and others, though smaller in percentage, underscores the diverse professional backgrounds of patients. These findings indicate that aesthetic clinics primarily attract educated, employed, and younger female clients, providing a nuanced understanding of targeted marketing strategies.

Table 1. Respondent Profile

Description	Category	Number (n)	Percentage (%)
Gender	Woman	134	80
	Men	34	20
Total		168	100
Age	18 - 29 Years old	89	53

Description	Category	Number (n)	Percentage (%)
Total	30 - 39 Years old	55	33
	40 - 50 Years old	24	14
Education	High school	50	30
	Undergraduate	80	48
	Diplomas	32	19
	Post Graduate	6	4
Total		168	100
Occupation	Employee	115	68
	Students	25	15
	Housewife	14	8
	Entrepreneur	8	5
	Artist/Influencer	3	2
	Others	3	2
Total		168	100

In the initial step of the first stage of the outer model, an image was obtained as in Figure 2. where it can be seen the outer loading value, including the six dimensions or LOC of overall service quality The value in the circle shows Cronbach's alpha as an indicator of the reliability of the construct with a lower limit of 0.7

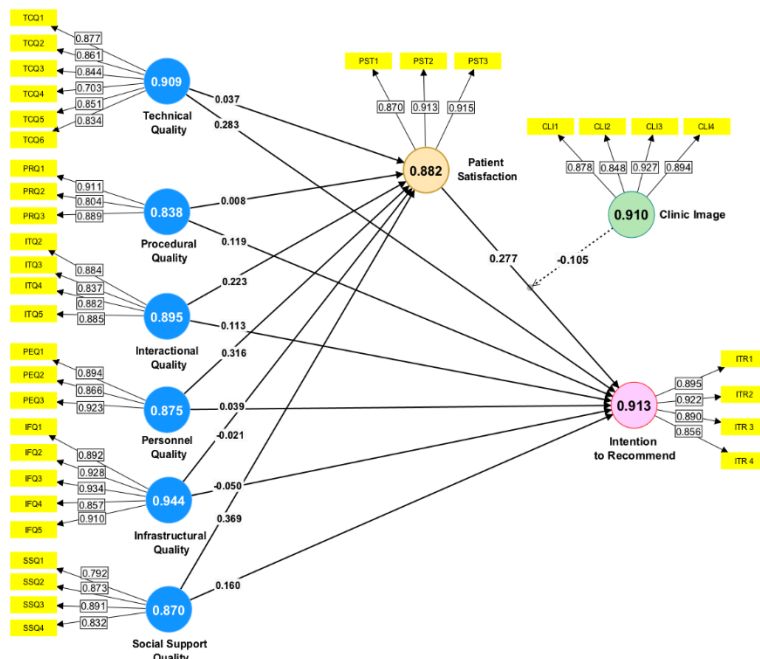


Figure 2. Outer Model First Stage (with LOC)

In the first stage - outer model analysis, the assessment of reliability and validity focuses on Cronbach's alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE). The results in Table 2 showed that most constructs meet

the recommended thresholds for reliability and validity, with Outer Loadings (OL) generally above 0.7, indicating that the indicators consistently contribute to their respective constructs' measurements. However, some constructs, such as procedural quality (CA = 0.608, CR = 0.641) and interactional quality (CA = 0.634, CR = 0.652), show reliability values slightly below the recommended level of 0.7, suggesting the need for further evaluation of the indicators. However, indicators with loading values above 0.4 but below 0.7 can still be maintained because they do not reduce or disturb the Cronbach Alpha and AVE values (Hair et al., 2022), this is also related to the content validity of the constructs.

Table 2. Reliability and Validity in the First Stage

Variable	Code	Indicator	OL	CA	CR	AVE
Infrastructural Quality (LOC)	IFQ1	This aesthetic clinic has a strategic location	0.892	0.656	0.658	0.568
	IFQ2	The treatment equipment at this aesthetic clinic look well maintained	0.928			
	IFQ3	The waiting room at this aesthetic clinic is comfortable.	0.934			
	IFQ4	This aesthetic clinic has modern treatment equipment.	0.857			
	IFQ5	This aesthetic clinic has a clean treatment room.	0.911			
Interactional Quality (LOC)	ITQ2	The staff at the aesthetic clinic provide sincere service.	0.884	0.634	0.652	0.551
	ITQ3	I got clear information from doctors and staff in this clinic	0.837			
	ITQ4	The doctor can explain the benefits of the equipment	0.882			
	ITQ5	I quickly got an answer from the staff at this clinic.	0.885			
Personnel Quality (LOC)	PEQ1	I saw the doctor was skilled in performing skin care procedures	0.894	0.613	0.644	0.562
	PEQ2	In my opinion, the doctors at this aesthetic clinic have the ability to deal with problems with the patient's skin.	0.866			
	PEQ3	The doctor looks experienced in using medical equipment	0.923			
Procedural Quality (LOC)	PRQ1	Before the procedure, the doctor provides clear information	0.911	0.608	0.641	0.556
	PRQ2	The doctor provides information on post-treatment steps well.	0.804			
	PRQ3	Patients do not have to wait long at this aesthetic clinic.	0.889			
Social Support Quality (LOC)	SSQ1	I got the information in social media about this aesthetic clinic.	0.792	0.604	0.633	0.599
	SSQ2	My friends told me good things about this aesthetic clinic	0.873			
	SSQ3	This aesthetic clinic seems to have a positive worth of mouth on social media	0.891			
	SSQ4	I haven't heard anything bad about this clinic from my friends	0.832			

Variable	Code	Indicator	OL	CA	CR	AVE
Technical Quality (LOC)	TCQ1	The aesthetic treatments at this clinic provide results that are in accordance with the doctor's plan.	0.877	0.631	0.646	0.578
	TCQ2	This aesthetic clinic has a various selection of aesthetic treatment techniques	0.861			
	TCQ3	This aesthetic clinic has equipment with new medical technology.	0.844			
	TCQ4	I have not heard that there has ever been an aesthetic procedure error	0.703			
	TCQ5	My skin has become brighter since the treatment at this clinic.	0.851			
	TCQ6	I didn't feel any pain during the treatment at this aesthetic clinic.	0.834			
Clinic Image	CLI1	This aesthetic clinic is popular among people	0.878	0.632	0.651	0.547
	CLI2	This aesthetic clinic is famous for the quality of its skincare results.	0.848			
	CLI3	This aesthetic clinic is known for having modern skincare innovations.	0.927			
	CLI4	This aesthetic clinic is a preference for the famous people.	0.894			
Patient Satisfaction	PST1	The results of the treatment at this clinic are fulfil my expectations.	0.871	0.582	0.626	0.524
	PST2	Overall I am satisfied with the service provided by this aesthetic clinic	0.913			
	PST3	I had a good experience at this aesthetic clinic.	0.915			
Intention to Recommend	ITR1	I would recommend this clinic based on my own experience	0.891	0.622	0.644	0.528
	ITR2	I would recommend this aesthetic clinic to my friends.	0.856			
	ITR3	I don't mind explaining that this clinic is a top choice for aesthetic treatments.	0.895			
	ITR4	I will volunteer to tell positive things about the aesthetic clinic on my social media.	0.922			

OL=outer loading, CA=Cronbach's Alpha, CR=Composite Reliability, AVE=Average Variance Extracted (AVE)

When comparing LOCs of service quality based on AVE values, it is evident that social support quality exhibits the highest AVE at 0.599, indicating better convergent validity, whereas patient satisfaction shows the lowest AVE at 0.524, close to the acceptable limit. The technical quality construct also demonstrates strong

indicator loadings (TCQ1 = 0.877), but its CA and CR values remain marginally lower (CA = 0.631, CR = 0.646). Overall, the results suggest that while the constructs exhibit reasonable levels of reliability and validity, specific constructs such as interactional quality and procedural quality require improvements in their measurement properties to achieve robust reliability in future analysis.

These results showed that the majority of constructs perform well in terms of reliability and validity. At this first stage, a discriminant validity test was also carried out based on the HTMT ratio, where it was found that there were no HTMT values greater than 0.9, so no discriminant problems were found, and all indicators were well differentiated. Therefore, it can be continued to the next stage, which is the outer model second stage.

The discriminant validity assessment in the second stage with the HOC using the Heterotrait-monotrait (HTMT) ratio can be seen in Table 3. The result of this HTMT ratio confirms adequate discriminant validity across the constructs in the model. All HTMT ratios are below the threshold of 0.90 as required (Henseler et al., 2015), indicating that each construct is distinct from others. Specifically, the HTMT values between constructs, such as Overall Service Quality (OSQ) and Patient Satisfaction (PST) at 0.890, and between OSQ and Intention to Recommend (ITR) at 0.893, satisfy the prescribed criterion.

Additionally, the upper bounds of the confidence intervals for all HTMT ratios remain below 1, providing further evidence of discriminant validity. These results imply that the constructs are not excessively overlapping, ensuring the theoretical distinctiveness of OSQ, PST, ITR, and Clinic Image (CLI). This finding enhances the model's validity by confirming that each construct contributes uniquely to explaining the variance in the dependent variable, the intention to recommend. The clear separation of constructs supports the robustness of the hierarchical reflective measurement model for overall service quality as HOC is measured by its dimensions and affirms the validity of the measurements with the six LOCs.

Table 3. Discriminant Validity Second Stage (HTMT)

Variable	Clinic Image	Intention to Recommend	Overall Service Quality (HOC)	Patient Satisfaction
CLI				
ITR	0.785 CI (0.709-0.859)			
OSQ (HOC)	0.838 CI (0.760-0.918)	0.893 CI (0.839-0.960)		
PST	0.831 CI (0.761-0.907)	0.878 CI (0.802-0.951)	0.890 CI (0.865-0.954)	

The results from the PLS Predict analysis are in Table 4 below. confirm the model's strong predictive performance compared to both the Indicator Average (IA) and Linear Model (LM). Specifically, the average loss difference of intention to recommend (-0.140, $p=0.000$) and patient satisfaction (-0.153, $p = 0.000$) was

significantly negative when compared with IA, demonstrating the PLS-SEM model's better accuracy in out-of-sample prediction. However, when compared with LM, the average loss differences for both variables are not statistically significant ($p > 0.05$), suggesting that the PLS-SEM model's predictive advantage over LM is limited and needs to be confirmed in future studies.

Table 4. Cross Validated Predictive Ability Test (CVPAT)

Variable	PLS-SEM vs. Indicator average (IA)		PLS-SEM vs. Linear model (LM)	
	Average loss difference	p-value	Average loss difference	p-value
Intention to Recommend	-0.140	0.000	-0.012	0.136
Patient Satisfaction	-0.153	0.000	-0.028	0.166
Overall Model	-0.146	0.000	-0.019	0.116

Overall, the model achieves an average loss difference of -0.146 ($p = 0.000$) against IA, confirming its robust predictive ability. These findings highlight the value of using PLS Predict with cross-validated predictive ability testing (CVPAT) as a more comprehensive approach than relying solely on Q^2 values. The superior predictive accuracy implies practical relevance, indicating that the model can predict patient outcomes beyond the sample used for estimation. Consequently, this underscores the potential utility of the model for guiding strategic decisions in aesthetic clinic management to improve patient satisfaction and recommendation behaviors.

The results of bootstrapping in the second stage, where LOC has become six reflective indicators for overall service quality (HOC), produce images like in Figure 3. The number in the circle of patient satisfaction ($R^2 = 0.694$) indicates that 69.4% of the variance in patient satisfaction is explained by overall service quality. This result demonstrates a strong explanatory capability of the model for this construct. Regarding intention to recommend ($R^2 = 0.745$), this result shows that 74.5% of the variance in intention to recommend is explained by patient satisfaction and overall service quality, indicating a strong explanatory power model. Therefore, the model effectively demonstrates the substantiality of overall service quality in enhancing patient satisfaction and driving the intention to recommend.

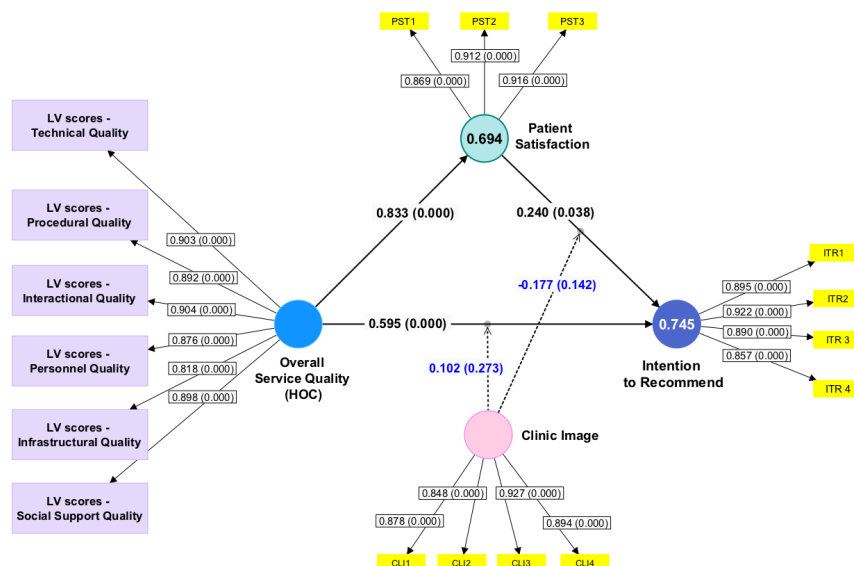


Figure 3. Inner Model First Stage (with HOC)

Overall Service Quality (HOC) is measured through six reflective indicators, all of which exhibit strong outer loadings above 0.8, confirming their reliability in measuring the construct. These indicators include technical quality, procedural quality, interactional quality, personnel quality, infrastructural quality, and social support quality. collectively, these dimensions provide a comprehensive evaluation of service quality, with each contributing to the overall perception of quality that significantly drives patient satisfaction and their intention to recommend the clinic. The analysis of the direct paths in Figure 3. showed that overall service quality (HOC) has a significant and strong positive effect on Patient Satisfaction ($\beta = 0.833$, $p = 0.000$), highlighting its critical role in influencing patients' perceptions of satisfaction. patient satisfaction also contributes positively and significantly to the intention to recommend ($\beta = 0.240$, $p = 0.038$), albeit with a smaller effect size. In addition, overall service quality directly impacts the intention to recommend ($\beta = 0.595$, $p = 0.000$), emphasizing the importance of perceived service quality in fostering positive word-of-mouth intentions.

The hypothesis testing results in Table 5. provide important insights into the relationships among variables in the model. Hypotheses H1 to H4 are supported based on significant p-values (< 0.05), confidence intervals (CIs) that did not contain the value 0, and positive coefficients aligning with the proposed one-tailed hypotheses. Overall service quality (HOC) significantly influences patient satisfaction with a strong positive effect ($\beta = 0.833$, $p = 0.000$, $CI = [0.791, 0.879]$), demonstrating a substantial impact supported by a large effect size ($f^2 = 2.264$). Moreover, overall service quality significantly affects intention to recommend ($\beta = 0.595$, $p = 0.000$, $CI = [0.409, 0.976]$), indicating a notable direct influence with a medium effect size ($f^2 = 0.309$). On the other side patient satisfaction significantly impacts the intention to recommend with a smaller but meaningful effect ($\beta = 0.240$, $p = 0.038$, $CI = [0.032, 0.412]$), supported by a small effect size ($f^2 = 0.060$). while the mediation effect of patient satisfaction in the relationship between overall service quality and intention to

recommend was also significant ($\beta = 0.201$, $p = 0.038$, $CI = [0.028, 0.382]$), confirming an indirect pathway.

Table 5. Hypotheses Test Result

	Hypotheses	Coefficient	P-values	Confidence Interval		Result	f ²
				5.0%	95.0%		
H1	Overall Service Quality (HOC) -> Patient Satisfaction	0.833	0.000	0.791	0.879	Hypothesis supported	2.264
H2	Overall Service Quality (HOC) -> Intention to Recommend	0.595	0.000	0.409	0.976	Hypothesis supported	0.309
H3	Patient Satisfaction -> Intention to Recommend	0.240	0.038	0.032	0.412	Hypothesis supported	0.060
H4	Overall Service Quality (HOC) -> Patient Satisfaction -> Intention to Recommend	0.201	0.038	0.028	0.382	Hypothesis supported	0.039
H5	Clinic Image x Overall Service Quality (HOC) -> Intention to Recommend	0.102	0.273	-0.043	0.502	Hypothesis not supported	0.011
H6	Clinic Image x Patient Satisfaction -> Intention to Recommend	-0.177	0.142	-0.546	-0.008	Hypothesis not supported	0.031

Conversely, **H5 and H6** were not supported. H5 showed no significant moderating effect of Clinic Image on the relationship between overall service quality and intention to recommend ($\beta = 0.102$, $p = 0.273$, $CI = [-0.043, 0.502]$). Similarly, H6 revealed no significant moderation by clinic image on the relationship between patient satisfaction and intention to recommend, with a negative coefficient that includes zero in its confidence interval ($\beta = -0.177$, $p = 0.142$, $CI = [-0.546, -0.008]$). These findings highlight the pivotal role of overall service quality and patient satisfaction in driving recommendation behavior, while the moderating effect of clinic image appears less relevant in this context

5. Discussion

This study aimed to analyze the influence of overall service quality on the intention to recommend aesthetic beauty clinics, with patient satisfaction as a mediating factor and clinic image as a moderating variable. This study underscores the significance of delivering high-quality services in aesthetic clinics, particularly those operated by doctors, in enhancing patient satisfaction and intention to recommend. In practice, aesthetic clinics must balance two key dimensions of service quality: technical and functional. Technical quality refers to the expertise of the doctors, adherence to

medical protocols, and satisfaction with the outcomes of aesthetic procedures such as fillers or laser treatments. Functional quality emphasizes interpersonal aspects, such as empathetic communication and a warm interaction between doctors and patients. The integration of both dimensions ensures a comprehensive patient experience that aligns with their medical and emotional expectations.

Through the new disjoint two-stage approach in hierarchical component analysis, The findings emphasize that all first-order latent constructs (LOCs), namely technical quality, procedural quality, interactional quality, personnel quality, infrastructural quality, and social support quality, are indispensable in reflecting the higher-order construct (HOC) of overall service quality in the context of aesthetic clinics. The high loading values where all loading exceeding 0.708 indicate that each dimension significantly contributes to shaping the perceived overall service quality. This study result provides a novel insight by demonstrating the interconnectedness of these dimensions, highlighting that a holistic and integrated approach is essential to meet patients' complex expectations in aesthetic clinics. Unlike prior research, which often focuses on isolated service dimensions (Abbasi-Moghaddam et al., 2019; Clemes et al., 2001), this study underscores the critical interplay of all LOCs as reflective of the HOC, offering a comprehensive framework for improving patient satisfaction and loyalty. This study is consistent with previous studies which shown social support quality, which includes emotional care, reassurance, and personalized attention, is essential for creating a positive patient experience in a setting where patients seek both aesthetic enhancement and emotional well-being (Alghonaim et al., 2019; Chen et al., 2020). These findings have practical implications, suggesting that clinic managers should focus on clinical outcomes and also invest in social support systems, interpersonal interactions, and procedural support to achieve superior service quality perceptions.

Moreover, the study confirms the mediating role of patient satisfaction between service quality and intention to recommend, reinforcing its pivotal function in shaping future patient behavior. With an R^2 value of 0.694 for patient satisfaction, the model demonstrates that nearly 69.4% of the variance in patient satisfaction is explained by the dimensions of service quality. This result is conforming the previous study (Batbaatar et al., 2016, Endeshaw, 2020). Moreover, this finding validates the theoretical framework that positions satisfaction as both an outcome of service quality and a driver of behavioral loyalty, offering a more comprehensive understanding of patient experience in aesthetic healthcare.

The predictive relevance of the model further supports its robustness. The Q^2 values of 0.678 for patient satisfaction and 0.679 for intention to recommend indicate that the model has substantial predictive power for these constructs. These values confirm the ability of the model to predict out-of-sample data, thus enhancing its practical applicability for aesthetic clinics aiming to improve patient outcomes and loyalty.

Key findings reveal that overall service quality significantly influences patient satisfaction (H1) and intention to recommend (H2). Additionally, patient satisfaction positively mediates the relationship between overall service quality and the intention

to recommend (H4). However, the moderating role of clinic image on both direct and mediated pathways (H5 and H6) was not supported, indicating that other contextual factors may dilute its impact. In this study, aesthetic clinics may rely more on direct patient experiences and treatment outcomes. This highlights the unique dynamics of hedonic healthcare services, where tangible outcomes and interpersonal interactions outweigh the influence of abstract perceptions like brand image. This insight challenges assumptions from mainstream healthcare research and calls for further exploration.

These results underscore the centrality of delivering superior overall service quality in fostering patient satisfaction and recommendation intentions (Diaz et al., 2023; Endeshaw, 2020; Park et al., 2022), showing the integration of functional and technical aspects of service quality is particularly noteworthy. While previous studies, such as Swain and Kar (2018), emphasize hospital service quality's functional dimensions, this study highlights the need to balance outcome-oriented technical quality with process-driven functional quality in aesthetic clinics. The findings support the argument that, in services with outcome-focused goals, technical service quality, such as the effectiveness of beauty treatments, is equally, if not more, critical than functional aspects.

Aesthetic clinics can implement these findings by providing continuous training programs for both doctors and supporting staff to enhance communication skills and empathy. This strengthens functional quality while investing in advanced medical equipment and professional training ensures technical excellence. A seamless experience, combining positive interaction and satisfactory medical results, will mitigate patient dissatisfaction and build loyalty. Ultimately, this holistic approach reinforces patient satisfaction and boosts the likelihood of them recommending the clinic to others.

This study's novelty lies in its context-specific application to aesthetic clinics and its use of higher-order constructs to evaluate service quality comprehensively. In addition to prior studies in general healthcare settings, such as the research by Swain and Kar (2018) focusing on inpatients, this study focuses on the unique hedonistic and personalized nature of aesthetic services, which require a nuanced understanding of process and outcome quality. The findings align partially with a recent study on aesthetic service quality (Octaviani et al., 2022; Woo & Choi, 2021), emphasizing patient experience with both the affective and cognitive aspects of evaluation as a pivotal factor in this unique field. The practical implications of these findings are substantial. Aesthetic clinics should prioritize enhancing technical and functional dimensions of service quality to boost patient satisfaction and their willingness to recommend. Additionally, as patient satisfaction emerges as a key driver of recommendation intentions, clinics must consistently monitor and address factors influencing satisfaction, such as procedural outcomes and interaction quality.

Overall, this study contributes to the literature by extending the application of service quality theories to the aesthetic clinic sector. The integration of technical quality aspects reflects the growing trend in healthcare marketing to address the hedonistic

and outcome-focused expectations of consumers. Clinics should focus on creating consistently positive patient experiences rather than heavily relying on marketing strategies aimed at building clinic image. This could involve ensuring that each patient feels heard, respected, and satisfied with their procedure outcomes. Such efforts to enhance direct patient experiences are likely to have a more substantial impact on the intention to recommend. This study also opens avenues for further exploration of moderating variables that may better explain the relationships within the proposed model. Variables such as perceived value or emotional attachment could be examined in future studies to provide deeper insights into the factors influencing patient loyalty in aesthetic healthcare. These directions for future research aim to provide a more nuanced understanding of patient behavior in hedonic services.

Despite the generalization of the result, that should be confirmed with the broader population from various cultures across countries. The other limitation of this study is the potential unobserved heterogeneity among respondents, particularly related to personality traits, which might influence perceptions of service quality, satisfaction, and intention to recommend. For instance, optimistic or critical personality types could bias satisfaction levels irrespective of the actual service provided. Future research can address this by including personality traits as moderators to isolate these effects. Finally, this research contributes to the broader literature on service marketing in healthcare by demonstrating the importance of technical quality in addition to functional quality. By integrating technical and functional dimensions, the findings provide a more nuanced view of service quality in aesthetic clinics, offering both theoretical and practical implications that align with the evolving needs of hedonic healthcare consumers. These insights are particularly valuable for clinic managers seeking evidence-based strategies to improve patient satisfaction and loyalty.

6. Conclusions

The results of this study conclude that all dimensions of overall service quality, modeled as a higher-order construct (HOC), are essential reflective of their respective lower-order constructs (LOCs). Ultimately, those can significantly predict the intention to recommend the aesthetic clinic, which is an effective marketing tool. Among the dimensions, **social support quality** and **technical quality** emerge as critical dimensions that drive patient perceptions in the context of aesthetic clinics. The strong loadings of technical quality demonstrate the importance of precise clinical execution and adherence to procedural standards, while the inclusion of social support quality highlights the increasing demand for emotional and relational care as part of the aesthetic service experience. This holistic understanding is further supported by the robust model's explanatory and predictive capabilities; these outcomes underscore the importance of designing a patient-centered approach to service delivery, combining technical expertise with empathetic care.

The key contribution of this research lies in its integration of LOC and HOC modeling, offering a nuanced perspective on service quality dimensions in aesthetic clinics. Unlike prior studies that often examine service quality dimensions in isolation, this

study advances the theoretical understanding of how diverse dimensions synergistically reflect overall service quality. Specifically, the findings illuminate the underexplored roles of social support and technical quality as foundational pillars of patient satisfaction and loyalty. By emphasizing these dimensions, this study addresses a critical gap in the literature, particularly in aesthetic healthcare, where both clinical precision and relational care are essential for shaping positive patient outcomes. This integrated approach offers a replicable framework for future research and provides actionable insights for clinic managers to holistically enhance service quality and patient experience.

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