






ORIGINAL

The role of interpersonal skills and massage therapist competence on service quality: the mediating role of customer satisfaction

El papel de las habilidades interpersonales y la competencia del masajista en la calidad del servicio: el papel mediador de la satisfacción del cliente

Septiari Nawanksari¹ , Komarudin² , Ali Satia Graha² , Christine Ulina Tarigan¹ , Aza Azlina Md Kassim³ 

¹Yogyakarta State University, Department of Culinary, Fashion, and Cosmetology, Yogyakarta, Indonesia.

²Yogyakarta State University, Department of Sports and Health, Yogyakarta, Indonesia.

³Management and Science University, Department of Postgraduate Centre, Selangor, Malaysia.

Cite as: Nawanksari S, Komarudin, Satia Graha A, Ulina Tarigan C, Md Kassim AA. The role of interpersonal skills and massage therapist competence on service quality: the mediating role of customer satisfaction. *Health Leadership and Quality of Life*. 2025; 4:760. <https://doi.org/10.56294/hl2025760>

Submitted: 10-09-2024

Revised: 09-02-2025

Accepted: 24-08-2025

Published: 25-08-2025

Editor: PhD. Neela Satheesh 

Corresponding author: Septiari Nawanksari 

ABSTRACT

Customer satisfaction is a fundamental determinant of sustainability and competitiveness in the spa industry. Interpersonal skills and therapist competence are key factors influencing both the emotional experience of clients and their assessment of service quality. However, therapists often face challenges such as limited communication skills, inconsistent massage techniques, and a lack of professionalism, which may reduce satisfaction and loyalty while weakening the industry's image. This study aims to examine the influence of interpersonal skills and therapist competence on service quality, with customer satisfaction serving as a mediating variable. A quantitative ex-post facto design was applied with a sample of 100 respondents, comprising 50 certified spa therapists and 50 spa customers in Yogyakarta, selected through probabilistic random sampling. Data were collected using an online questionnaire with a four-point Likert scale. The instrument was tested for validity and reliability, and data analysis was performed using Structural Equation Modeling (SEM) with SmartPLS 3 to evaluate variable relationships and mediation effects. The results indicate that both interpersonal skills and therapist competence significantly affect customer satisfaction. Therapist competence also directly influences service quality, whereas interpersonal skills do not. Furthermore, customer satisfaction functions as a significant mediator linking both interpersonal skills and therapist competence to service quality. This study highlights the importance of improving therapist competence in parallel with strengthening interpersonal skills to enhance customer satisfaction and overall service quality. The findings contribute practically to the development of standardized spa services and theoretically by integrating service management and wellness perspectives.

Keywords: Interpersonal Skills; Massage Therapist Competence; Customer Satisfaction; Service Quality.

RESUMEN

La satisfacción del cliente es un factor fundamental para la sostenibilidad y la competitividad en la industria del spa. Las habilidades interpersonales y la competencia de los terapeutas son elementos clave que influyen tanto en la experiencia emocional de los clientes como en su evaluación de la calidad del servicio. Sin embargo, muchos terapeutas aún enfrentan desafíos como limitaciones en la comunicación, técnicas de masaje inconsistentes y falta de profesionalismo, lo que puede disminuir la satisfacción, debilitar la lealtad y afectar la imagen del sector. El objetivo de este estudio es analizar la influencia de las habilidades interpersonales y la competencia de los terapeutas en la calidad del servicio, considerando la satisfacción

del cliente como variable mediadora. Se aplicó un diseño cuantitativo ex post facto con una muestra de 100 participantes, compuesta por 50 terapeutas de spa certificados y 50 clientes en Yogyakarta, seleccionados mediante muestreo probabilístico aleatorio. Los datos se recopilaron mediante un cuestionario en línea con escala Likert de cuatro puntos. El instrumento fue validado y se verificó su fiabilidad. El análisis se realizó con Modelado de Ecuaciones Estructurales (SEM) utilizando SmartPLS 3 para evaluar las relaciones entre variables y el efecto de mediación. Los resultados muestran que tanto las habilidades interpersonales como la competencia del terapeuta influyen significativamente en la satisfacción del cliente. Además, la competencia tiene un efecto directo sobre la calidad del servicio, mientras que las habilidades interpersonales no. La satisfacción del cliente actúa como mediador significativo entre ambas variables y la calidad del servicio.

Palabras clave: Habilidades Interpersonales; Competencia del Terapeuta de Masaje; Satisfacción del Cliente; Calidad del Servicio.

INTRODUCTION

Customer satisfaction is widely recognized as a key determinant of business sustainability, competitiveness, and long-term growth.^(1,2,3) Organizations that are able to maintain high levels of customer satisfaction generally achieve greater customer loyalty, positive reputation, and improved financial performance.^(4,5,6,7) In the service sector, especially in the spa industry, customer satisfaction is crucial because services are delivered directly through human interaction.⁽⁸⁾ Therapists play a central role in shaping the customer's experience, which directly impacts perceived service quality.^(8,9)

Despite its importance, many spa businesses face persistent challenges.⁽¹⁰⁾ Customers frequently report dissatisfaction due to ineffective communication, inconsistent massage techniques, limited explanation of treatment procedures, and insufficient attention to individual preferences.⁽¹⁰⁾ A recent survey by the Indonesian Spa Association found that 72 % of customer complaints were caused by human error, including therapists' inability to clearly explain treatment steps, repeated mistakes in product application, and the absence of standardized operational procedures. Similar findings in international studies show that more than half of service complaints in spas are linked to therapists' deficiencies in soft skills.⁽¹¹⁾ These problems highlight the urgent need to strengthen both interpersonal skills and technical competence among spa therapists.⁽¹⁰⁾

From a theoretical perspective, the Resource-Based View (RBV) explains that human resources can serve as a source of sustainable competitive advantage if they possess valuable, rare, inimitable, and non-substitutable qualities.⁽¹²⁾ In this context, therapists' interpersonal skills and professional competence are strategic internal resources that contribute to superior service quality and customer satisfaction.^(13,14) Empirical research also supports the mediating role of satisfaction in linking staff competence and interpersonal interactions with customer loyalty.^(6,15,16-24) Nevertheless, existing studies rarely focus specifically on the spa industry in Indonesia, where cultural expectations, training standards, and service delivery models differ from those in other countries.

Although several studies have explored the relationship between service quality, satisfaction, and loyalty in hospitality and healthcare services, three critical gaps remain in the context of massage therapy.⁽¹⁹⁾ First, limited research examines how therapists explain treatment procedures in a way that integrates medical and wellness perspectives.⁽²⁰⁾ Second, little is known about therapists' awareness of contraindications in treatments.⁽²¹⁾ Third, there is no comprehensive model that combines interpersonal skills with technical competence to enhance service quality through customer satisfaction.⁽²²⁾

This study is important because the spa industry in Indonesia is growing rapidly and requires therapists who are not only technically competent but also capable of building effective interpersonal communication with clients. Without adequate interpersonal skills, customer expectations remain unmet, which can reduce satisfaction and threaten the sustainability of spa businesses. Furthermore, previous research has emphasized the role of interpersonal skills and competence separately, but few have integrated both dimensions in a single model that considers customer satisfaction as a mediator. By addressing this gap, the study provides insights that are both theoretically relevant and practically useful for improving service standards in the spa industry.

This study aims to analyze the influence of interpersonal skills and therapist competence on service quality, with customer satisfaction as a mediating variable.

METHOD

Research Design

This research employed a quantitative observational study with an ex-post facto design. The study was non-experimental, as it analyzed phenomena that had already occurred without manipulating variables. This design was chosen to evaluate the relationships among interpersonal skills, therapist competence, customer

satisfaction, and service quality in the spa industry.

Population and Sample

The population of this study consisted of spa therapists and spa customers in Yogyakarta. The sample included 50 certified spa therapists and 50 spa customers, selected from eight spa businesses that met legal and certification requirements. Participants were chosen using probabilistic random sampling to ensure equal opportunity for inclusion.

Variables

Independent Variables

Interpersonal Skills (problem solving, openness, initiative)

Therapist Competence (technical, digital, professional, and social competence).

Mediating Variable

Customer Satisfaction (expectations, perceived performance, and comparison between expectations and reality).

Dependent Variable

Service Quality (tangibles, reliability, assurance, responsiveness, empathy).

Conceptual Framework

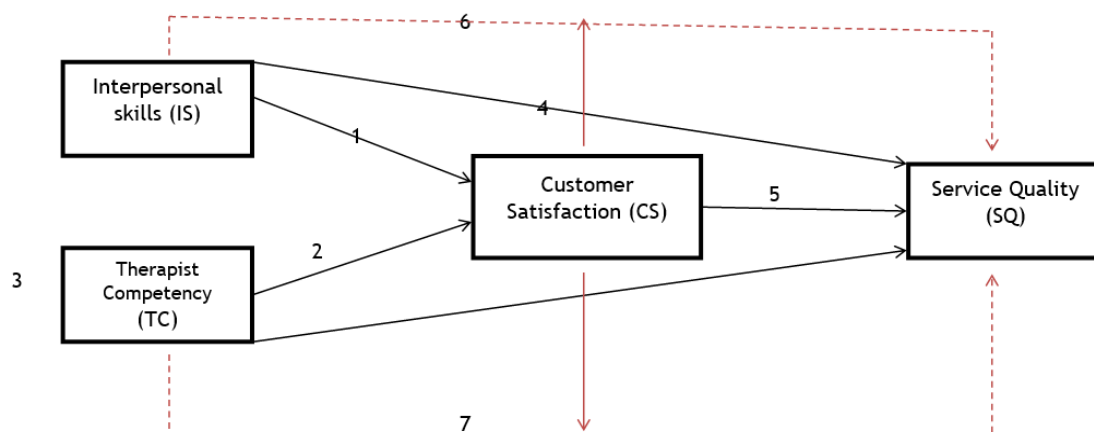


Figure 1. Preliminary Research Concept

Hypotheses Development

Based on the conceptual framework illustrated above, the following research hypotheses are formulated:

Table 1. Formulated hypotheses

H ₁	Interpersonal Skills (IS) have a significant positive influence on Customer Satisfaction (CS)
H ₂	Therapist Competence (TC) has a significant positive influence on Customer Satisfaction (CS)
H ₃	Therapist Competence (TC) has a significant positive influence on Service Quality (SQ)
H ₄	Interpersonal Skills (IS) have a significant positive influence on Service Quality (SQ).
H ₅	Customer Satisfaction (CS) has a significant positive influence on Service Quality (SQ).
H ₆	Interpersonal Skills (IS) indirectly influence Customer Satisfaction (CS) through Service Quality (SQ).
H ₇	Therapist Competence (TCS) indirectly influence Customer Satisfaction (CS) through Service Quality (SQ).

Instrument

The instrument used in this study was a structured questionnaire developed based on established scales. Items were measured using a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree). Content validity was ensured through expert review, while construct validity and reliability were tested using outer loadings, Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE).

Data Collection Procedures

Data were collected between July and August 2024 through online questionnaires distributed via Google Forms. Before participation, respondents were informed about the study's objectives and provided informed consent. The indicator framework for each variable is presented in the table below:

Table 2. Instrument Grid				
Variable	Indicators		Code	Ref
Interpersonal Skills (IS)	Complex problem solving		IS1	(23)
	Opening Up		IS2	
	Initiative		IS3	
Therapist Competence (TC)	Competence	Digital	TC1	(24)
		Technical	TC2	
		Professional Staff	TC3	
		Social	TC4	
Customer Satisfaction (CS)	Customer's expectations before consumption		CS1	(25)
	Actual performance of the product or service		CS2	
	Comparison between expectations and reality		CS3	
Service Quality (SQ)	Tangibles		SQ1	(26)
	Reliability		SQ2	
	Assurance		SQ3	
	Responsiveness Empathy		SQ4	

Data Analysis

Data analysis was conducted using Structural Equation Modeling (SEM) with SmartPLS 3 software. The analysis included (1) instrument validity and reliability tests, (2) evaluation of model fit using SRMR and NFI indices, (3) testing of direct and indirect effects among variables, and (4) mediation testing of customer satisfaction.

Ethical Considerations

The research adhered to ethical standards in social science studies. Participation was voluntary, anonymity and confidentiality of data were guaranteed, and no sensitive personal information was collected. Ethical approval was obtained from the Faculty of Vocational Studies, Yogyakarta State University.

RESULTS

Instrument Validity and Reliability

All measurement instruments met the required validity and reliability standards. Outer loadings exceeded 0,70, Cronbach's Alpha and Composite Reliability values were above 0,70, and AVE values surpassed 0,50. These results confirmed that all constructs used in this study were valid and reliable for further analysis. The relationships among variables are illustrated in figure 2.

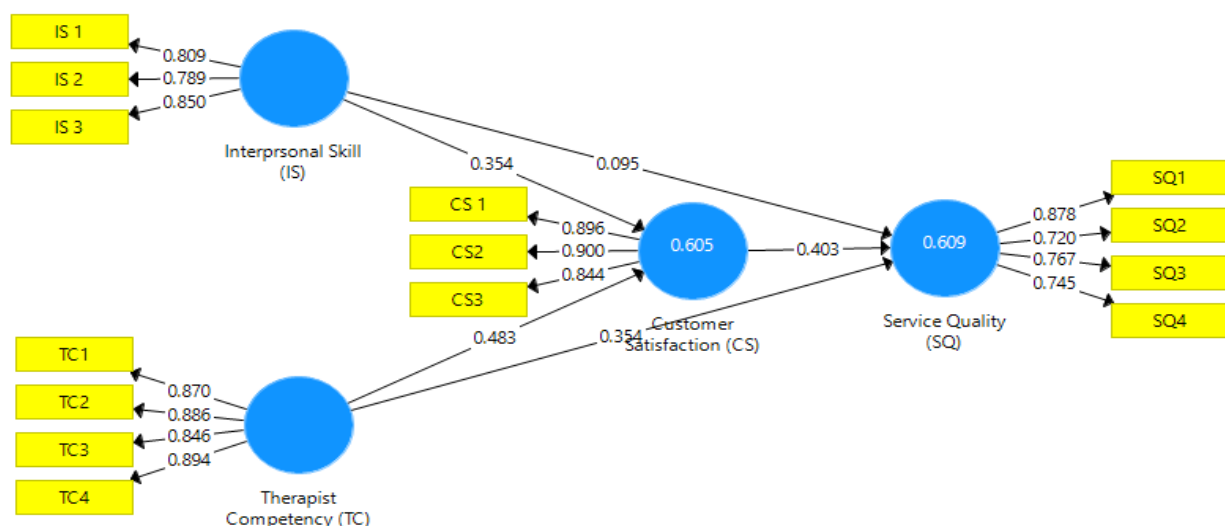


Figure 2. SEM Analysis

Detailed results of the validity and reliability tests are presented in table 3.

Variable	Item	Outer Loading	Decision	Cronbach's Alpha	Composite Reliability	AVE
<i>Interpersonal Skills(IS)</i>	IS 1	0,809	Valid	0,752	0,857	0,666
	IS 2	0,789	Valid			
	IS 3	0,850	Valid			
Therapist Competence (TC)	TC 1	0,870	Valid	0,897	0,928	0,764
	TC 2	0,886	Valid			
	TC 3	0,846	Valid			
	TC 4	0,894	Valid			
Customer Satisfaction (CS)	CS 1	0,896	Valid	0,857	0,912	0,775
	CS 2	0,900	Valid			
	CS 3	0,844	Valid			
<i>Service Quality (SQ)</i>	SQ 1	0,878	Valid	0,783	0,861	0,608
	SQ 2	0,720	Valid			
	SQ 3	0,767	Valid			
	SQ 4	0,745	Valid			

Model Fit Evaluation

The model demonstrated an acceptable fit, with an SRMR value of 0,094 (below the 0,10 threshold) and an NFI value of 0,685, which is considered relatively close to 1. These indices indicate that the model was adequate for hypothesis testing.

Direct Effect Testing

The analysis revealed that interpersonal skills significantly influenced customer satisfaction ($p = 0,030$). Therapist competence had a stronger effect on customer satisfaction ($p = 0,000$) and also positively affected service quality ($p = 0,007$). In contrast, interpersonal skills did not have a significant direct effect on service quality ($p = 0,286$). Customer satisfaction itself had a significant effect on service quality ($p = 0,005$). These results are detailed in table 4 below.

Hipotesis	Path Coefficient	p-value	95 % Confidence Interval Path Coefficient	f-square
H ₁ . <i>Interpersonal Skill (IS)</i> → Customer Satisfaction (CS)	0,354	0,030	0,560	0,152
H ₂ . Therapist Competence (TC) → Customer Satisfaction (CS)	0,483	0,000	0,682	0,283
H ₃ . Therapist Competence (TC) → Service Quality (SQ)	0,354	0,007	0,578	0,120
H ₄ . <i>Interpersonal Skills (IS)</i> → <i>Service Quality (SQ)</i>	0,095	0,286	0,401	0,010
H ₅ . Customer Satisfaction (CS) → Service Quality (SQ)	0,403	0,005	0,625	0,164

H1. *Interpersonal Skill (IS)* → Customer Satisfaction (CS)

Interpersonal Skills (IS) have a positive and significant effect on Customer Satisfaction (CS), with a path coefficient of 0,354. The p-value (0,030) < 0,05 confirms statistical significance. The effect size (f^2) of 0,152 indicates that interpersonal skills contribute a moderate effect to the variance in customer satisfaction.

H2. Therapist Competence (TC) → Customer Satisfaction (CS)

Therapist Competence (TC) has a positive and highly significant effect on Customer Satisfaction (CS), with a path coefficient of 0,483. The p-value (0,000) < 0,05 confirms a strong level of statistical significance. The effect size (f^2) of 0,283 suggests that therapist competence contributes a substantial effect to the variance in customer satisfaction.

H3. Therapist Competence (TC) → Service Quality (SQ)

Therapist Competence (TC) also has a positive and statistically significant impact on Service Quality (SQ), with a path coefficient of 0,354. The p-value (0,007) < 0,05 confirms the significance of this relationship. The effect size (f^2) of 0,120 indicates a moderate contribution of therapist competence to the variance in service

quality.

H4. Interpersonal Skills (IS) → Service Quality (SQ)

Although Interpersonal Skills (IS) show a positive path coefficient of 0,095 toward Service Quality (SQ), the relationship is not statistically significant, as indicated by a p-value of 0,286 ($> 0,05$). Therefore, no significant direct effect is observed.

H5. Customer Satisfaction (CS) → Service Quality (SQ)

Customer Satisfaction (CS) demonstrates a positive and significant effect on Service Quality (SQ), with a path coefficient of 0,403. The p-value ($0,005 < 0,05$) indicates a statistically significant relationship. The effect size (f^2) of 0,164 suggests a moderate impact of customer satisfaction on the variance in service quality.

Indirect Effect Testing

H6. Interpersonal Skill (IS) → Customer Satisfaction (CS) → Service Quality (SQ)

The indirect effect of Interpersonal Skills (IS) on Service Quality (SQ) through Customer Satisfaction (CS) was found to be statistically significant (p-value = 0,043 $> 0,05$). The V Upsilon value of 0,0203 indicates that the mediating effect of Customer Satisfaction in this relationship is considered low.

H7. Therapist Competence (TC) → Customer Satisfaction (CS) → Service Quality (SQ)

The indirect effect of Therapist Competence (TC) on Service Quality (SQ) through Customer Satisfaction (CS) was also statistically significant (p-value = 0,047 $< 0,05$). The V Upsilon value of 0,0378 also indicates a low level of mediation effect by Customer Satisfaction. These results are detailed in Table 5 below.

Hypothesis	p-value	95 % Confidence Interval Path Coefficient	V Upsilon
H ₆ . Interpersonal Skill (IS) → Customer Satisfaction (CS) → Service Quality (SQ)	0,043	0,297	0,0203
H ₇ . Therapist Competence (TC) → Customer Satisfaction (CS) → Service Quality (SQ)	0,047	0,321	0,0378

DISCUSSION

The findings of this study confirm that both therapist competence and interpersonal skills are critical factors influencing customer satisfaction in the spa industry. However, therapist competence demonstrated a stronger direct effect on both satisfaction and service quality, thereby supporting the Resource-Based View (RBV) theory, which emphasizes that unique and inimitable human resources provide sustainable competitive advantage.⁽⁷⁾ Competent therapists who possess technical, digital, and professional expertise are able to deliver consistent and reliable services, which directly enhances perceived service quality. In contrast, interpersonal skills, while significant for customer satisfaction, did not have a direct effect on service quality. This result contrasts with the findings of Lin et al.⁽¹⁰⁾, who identified interpersonal interaction as a determinant of service quality in hospitality settings. A possible explanation is that in spa services, customers may perceive technical performance as the primary indicator of service quality, whereas interpersonal communication is valued more for emotional fulfillment. This interpretation is supported by Mishra and Panda⁽¹⁸⁾, who demonstrated that customer-therapist relationships in wellness resorts enhanced satisfaction but required technical competence to be translated into perceptions of high service quality.

In addition, the mediating role of customer satisfaction highlights that service quality is shaped not only by direct interactions but also by the extent to which customer expectations are met or exceeded. This finding is consistent in the hotel sector⁽¹⁵⁾ and ⁽²⁰⁾ in technology services ⁽¹⁶⁾ both of whom found that satisfaction mediates the relationship between service quality and loyalty. Further evidence from different contexts reinforces this perspective. For example, demonstrated that product quality and pricing significantly influenced customer satisfaction and loyalty among Mixue beverage consumers in Sukabumi, Indonesia, with satisfaction serving as a mediator.⁽²⁷⁾ Similarly, ⁽¹⁰⁾ revealed that nonverbal customer-to-customer interaction enhanced emotional responses, ultimately improving satisfaction, while ⁽²⁸⁾ reported that the use of clear and concrete language by employees increased satisfaction by 9 % and customer spending by 13 %. International studies also affirm this multidimensional view of satisfaction. In Tunisia, ⁽²⁹⁾ demonstrated a strong correlation between service quality and satisfaction in Islamic banking, showing that tangible service elements remain critical even in increasingly digitalized environments. Likewise, ⁽³⁰⁾ revealed that experiential quality shaped perceived value, satisfaction,

and loyalty in cafés in Malang. Collectively, these findings suggest that customer satisfaction is influenced by both tangible elements (e.g., product quality, price, facilities) and intangible dimensions (e.g., communication, interaction, experience), underscoring the need for a holistic approach to understanding satisfaction.

From a theoretical standpoint, this study extends the RBV framework by demonstrating that human resources—particularly therapist competence and interpersonal skills—function as strategic internal resources in service-based businesses. The SERVQUAL model further supports the centrality of service quality dimensions—tangibility, reliability, responsiveness, assurance, and empathy—in establishing and sustaining competitive advantage.⁽²⁶⁾ The Customer Satisfaction Index also emphasizes the mediating role of satisfaction in linking service quality to loyalty.⁽³¹⁾ Moreover, human resource competence, encompassing knowledge, skills, and attitudes, has been shown to positively influence employee commitment and performance.⁽³²⁾ Higher levels of commitment, in turn, strengthen organizational performance by ensuring the consistent delivery of quality services. Taken together, the integration of RBV, SERVQUAL, and HR competence provides a robust theoretical framework that explains how therapist attributes contribute to enhanced service quality and sustainable competitiveness.

From a practical perspective, the findings offer actionable implications for spa managers and practitioners. First, continuous professional development should be prioritized, with a particular emphasis on strengthening technical, digital, and professional competence. Second, while technical performance is critical, interpersonal communication skills should also be reinforced, as they significantly influence customers' emotional satisfaction. Training programs that integrate technical expertise with soft skills may lead to a more comprehensive and customer-centered service delivery model. Comparative evidence from Malaysia shows that structured training programs reduced customer complaints by up to 40 %, suggesting that similar strategies could be implemented in Indonesia to improve service standards in the spa sector. In this sense, the integration of competence-based training not only reduces dissatisfaction but also enhances customer trust, fosters loyalty, and strengthens the overall sustainability of spa businesses in a competitive marketplace.

Nevertheless, several limitations of this study should be acknowledged. First, the relatively small sample size, drawn only from spas in Yogyakarta, limits the generalizability of the findings. Second, the reliance on self-reported questionnaires may introduce response bias, as participants' perceptions do not always fully reflect actual service quality or satisfaction. Third, the cross-sectional research design restricts the ability to establish causal relationships among the variables. Future studies should expand the sample to include spas in other regions, adopt longitudinal approaches to track changes over time, and incorporate qualitative methods to gain deeper insights into therapist-customer interactions. Despite these limitations, this study makes important contributions. Theoretically, it integrates service management and wellness practices within the RBV and SERVQUAL frameworks, demonstrating how technical competence and interpersonal skills jointly contribute to service quality and satisfaction. Practically, it highlights the need for a holistic service strategy that addresses both functional and emotional dimensions of the customer experience. By adopting this integrated approach, spa businesses can achieve higher levels of satisfaction, foster stronger loyalty, and secure long-term competitive advantage.

CONCLUSIONS

This study concludes that both interpersonal skills and therapist competence are essential elements in shaping customer experiences in the spa industry. While therapist competence directly enhances service quality, interpersonal skills play a more significant role in fostering customer satisfaction, which in turn mediates the improvement of service quality. These findings highlight that technical expertise alone is not sufficient; emotional engagement and communication with clients are equally important for achieving customer-centered service delivery. Results contribute to the literature by integrating service management theories with health and wellness practices, offering a balanced perspective that combines technical and humanistic dimensions. Practically, the study suggests that spa businesses should invest in integrated training programs that strengthen both professional competence and interpersonal communication of therapists. Such efforts are expected to increase customer satisfaction, improve service quality, and support the long-term sustainability of the spa industry.

REFERENCES

1. Shokouhyar S, Shokoohyar S, Safari S. Research on the influence of after-sales service quality factors on customer satisfaction. *J Retail Consum Serv*. 2020;56:102139. <https://doi.org/10.1016/j.jretconser.2020.102139>
2. Truong NT, Dang-Pham D, McClelland RJ, Nkhoma M. Service innovation, customer satisfaction and behavioural intentions: a conceptual framework. *J Hosp Tour Technol*. 2020;11(3):529-42. <https://doi.org/10.1108/JHTT-02-2019-0030>
3. Gajewska T, Zimon D, Kaczor G, Madzik P. The impact of the level of customer satisfaction on the

quality of e-commerce services. *Int J Product Perform Manag*. 2020;69(4):666-84. <https://doi.org/10.1108/IJPPM-01-2019-0018>

4. Otto AS, Szymanski DM, Varadarajan R. Customer satisfaction and firm performance: insights from over a quarter century of empirical research. *J Acad Mark Sci*. 2020;48(3):543-64. <https://doi.org/10.1007/s11747-019-00657-7>

5. Vilkaite-Vaitone N, Skackauskiene I. Service customer loyalty: an evaluation based on loyalty factors. *Sustainability*. 2020;12(6):2260. <https://doi.org/10.3390/su12062260>

6. Khan RU, Salamzadeh Y, Iqbal Q, Yang S. The impact of customer relationship management and company reputation on customer loyalty: the mediating role of customer satisfaction. *J Relatsh Mark*. 2022;21(1):1-26. <https://doi.org/10.1080/15332667.2020.1840904>

7. Zhang G, Liu X. Industrial restructuring and corporate income distribution gap. *Financ Res Lett*. 2024;67:105896. <https://doi.org/10.1016/j.frl.2024.105896>

8. Mittal V, et al. Customer satisfaction, loyalty behaviors, and firm financial performance: what 40 years of research tells us. *Mark Lett*. 2023;34(2):171-87. <https://doi.org/10.1007/s11002-023-09671-w>

9. Zhong Y, Moon HC. What drives customer satisfaction, loyalty, and happiness in fast-food restaurants in China? Perceived price, service quality, food quality, physical environment quality, and the moderating role of gender. *Foods*. 2020;9(4):460. <https://doi.org/10.3390/foods9040460>

10. Lin H, Zhang M, Gursoy D. Impact of nonverbal customer-to-customer interactions on customer satisfaction and loyalty intentions. *Int J Contemp Hosp Manag*. 2020;32(5):1967-85. <https://doi.org/10.1108/IJCHM-08-2019-0694>

11. Williady A, Wardhani HN, Kim HS. A study on customer satisfaction in Bali's luxury resort utilizing big data through online review. *Adm Sci*. 2022;12(4):137. <https://doi.org/10.3390/admsci12040137>

12. Barney J. Firm resources and sustained competitive advantage. *J Manage*. 1991;17(1):99-120. <https://doi.org/10.1177/014920639101700108>

13. Pei XL, Guo JN, Wu TJ, Zhou WX, Yeh SP. Does the effect of customer experience on customer satisfaction create a sustainable competitive advantage? A comparative study of different shopping situations. *Sustainability*. 2020;12(18):7436. <https://doi.org/10.3390/su12187436>

14. Mishra DN, Panda RK. Evaluating visitor-therapist relationship in Indian spa and wellness resorts. *J Hosp Tour Insights*. 2023;6(5):2433-61. <https://doi.org/10.1108/JHTI-06-2022-0246>

15. Nikou S, Khiabani MM. Service quality, mediation effect of customer satisfaction, customer loyalty, and moderating role of interpersonal relationship: case of four-star hotels in Kuala Lumpur, Malaysia. *Asian J Econ Bus Account*. 2020;19(4):1-18. <https://doi.org/10.9734/ajeba/2020/v19i430309>

16. Razzan AKI, Sigit M. A study of the relationship between service quality, brand image, and customer satisfaction and its influence on customer loyalty of iPhone users in Yogyakarta. *Asian J Econ Bus Account*. 2023;23(23):114-27. <https://doi.org/10.9734/ajeba/2023/v23i231175>

17. Musriha M. Pengaruh servicescape dan kualitas komunikasi karyawan terhadap loyalitas nasabah melalui kepuasan nasabah Bank Mandiri di Surabaya. *Ekuitas J Ekon Keuangan*. 2018;15(2):247-68. <https://doi.org/10.24034/j25485024.y2011.v15.i2.273>

18. Hui S, Yee RWY. Relationship among interpersonal relationship, customer satisfaction and brand loyalty in fashion retailing industry. *Res J Text Appar*. 2015;19(1):65-72. <https://doi.org/10.1108/rjta-19-01-2015-b007>

19. Miao M, Jalees T, Zaman SI, Khan S, Hanif NA, Javed MK. The influence of e-customer satisfaction, e-trust and perceived value on consumer's repurchase intention in B2C e-commerce segment. *Asia Pac J Mark Logist*. 2022;34(10):2184-206. <https://doi.org/10.1108/APJML-03-2021-0221>

20. Kim JY, et al. Effects of robot-(Morning Walk®) assisted gait training for patients after stroke: a randomized controlled trial. *Clin Rehabil.* 2019;33(3):516-23. <https://doi.org/10.1177/0269215518806563>
21. Kim O, et al. Radiation safety education and compliance with safety procedures—the Korea Nurses' Health Study. *J Clin Nurs.* 2018;27(13-14):2650-60. <https://doi.org/10.1111/jocn.14338>
22. Razzaq ARA, Amiruddin MHB, Rohiat MA, Razali NB. Integrating knowledge and skills-based curriculum in TT-TVET through a blended and embedded model: an innovative approach at the faculty of technical and vocational education, Universiti Tun Hussien Onn Malaysia. In: *Innovative teaching and learning methods in educational systems.* 2019. p. 3-11.
23. Widarto W, Nawanksari S, Utami PM. The urgency of interpersonal skills, leadership and self-discipline for vocational high school students majoring in aesthetics and hairdressing. *J Pendidik Pengajaran.* 2024;57(3):520-31. <https://doi.org/10.23887/jpp.v57i3.77440>
24. Kowal B, Włodarz D, Brzychczy E, Klepka A. Analysis of employees' competencies in the context of Industry 4.0. *Energies.* 2022;15(19):7142. <https://doi.org/10.3390/en15197142>
25. Oliver RL, Balakrishnan PV, Barry B. Outcome satisfaction in negotiation: a test of expectancy disconfirmation. *Organ Behav Hum Decis Process.* 1994;60(2):252-75. <https://doi.org/10.1006/obhd.1994.1083>
26. Parasuraman A, Zeithaml VA, Berry LL. Reassessment of expectations as a comparison standard in measuring service quality: implications for further research. *J Mark.* 1994;58(1):111-24. <https://doi.org/10.1177/002224299405800109>
27. Lukmana A. Analysis of service quality and customer satisfaction on repurchase halal fashion products. *Econ Bus J.* 2023;1(2):65-72. <https://doi.org/10.47353/ecbis.v1i2.8>
28. Packard G, Berger J. How concrete language shapes customer satisfaction. *J Consum Res.* 2021;47(5):787-806. <https://doi.org/10.1093/jcr/ucaa038>
29. Zouari G, Abdelhedi M. Customer satisfaction in the digital era: evidence from Islamic banking. *J Innov Entrep.* 2021;10(1):9. <https://doi.org/10.1186/s13731-021-00151-x>
30. Kusumawati A, Rahayu KS. The effect of experience quality on customer perceived value and customer satisfaction and its impact on customer loyalty. *Hum Syst Manag.* 2020;39(2):219-32. <https://doi.org/10.3233/HSM-190564>
31. Fornell C. A national customer satisfaction barometer: the Swedish experience. *J Mark.* 1992;56(1):6-21. <https://doi.org/10.1177/002224299205600103>
32. Martini IAO, Supriyadinata AANE, Sutrisni KE, Sarmawa IWG. The dimensions of competency on worker performance mediated by work commitment. *Cogent Bus Manag.* 2020;7(1):1794677. <https://doi.org/10.1080/23311975.2020.1794677>

FINANCING

No financing.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHORSHIP CONTRIBUTION

Conceptualization: Septiari Nawankari, Komarudin, Ali Satia Graha.

Data curation: Komarudin.

Formal analysis: Ali Satia Graha.

Research: Septiari Nawankari, Komarudin, Ali Satia Graha.

Methodology: Septiari Nawanksari, Ali Satia Graha.

Project management: Septiari Nawankari, Komarudin, Ali Satia Graha.

Resources: Septiari Nawanksari.

Software: Septiari Nawanksari.

Supervision: Komarudin.

Validation: Ali Satia Graha.

Display: Komarudin.

Drafting - original draft: Komarudin.

Writing - proofreading and editing: Septiari Nawanksari.