

The Influence of Service Failure, Service Recovery, and Customer Forgiveness on Customer Loyalty

*The Influence of Service
Failure, Service
Recovery*

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ABSTRACT

Dental clinic services are vulnerable to service failures that can reduce patient trust and loyalty. This study analyzes the effect of service failure, service recovery, and customer forgiveness on revisit intention at dental clinics. The study used a quantitative approach with a survey method of 235 respondents who had used dental clinic services. Data analysis was conducted using Partial Least Square–Structural Equation Modeling (PLS-SEM) through SmartPLS to test the measurement and structural models, including direct and indirect effects. The results show that service failure has a negative and significant effect on service recovery, customer forgiveness, and revisit intention. Conversely, service recovery and customer forgiveness have a positive and significant effect on revisit intention. Mediation analysis shows that service recovery and customer forgiveness significantly mediate the relationship between service failure and revisit intention. The research model has good predictive ability based on the R-square, Q-square, and model fit index values. These findings emphasize the importance of minimizing service failures and strengthening patient recovery and relationship management strategies to increase loyalty and revisit intentions at dental clinics.

Keywords: *Customer Forgiveness, Dental Clinic, Revisit Intention, Service Failure, Service Recovery.*

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INTRODUCTION

World Health Organization (WHO) publication highlights that improving public access to healthcare services is a key objective of the Indonesian Ministry of Health. Oral health problems remain prevalent across most regions of Indonesia. At the same time, patient needs and experiences are becoming increasingly important as healthcare shifts from a disease-centered to a patient-centered approach. Under the disease-centered model, treatment decisions are determined primarily by the knowledge and expertise of healthcare professionals (Ekasari & Sulistiadi, 2020; van der Woude et al., 2025). In contrast, the patient-centered paradigm emphasizes active patient involvement, with care decisions guided by patients' needs and preferences.

This shift intensifies competition among medical institutions, compelling them to adopt strategies similar to commercial organizations to attract and retain patients. Consequently, understanding the factors that influence patients' intentions to return to dental clinics has become increasingly important (Park et al., 2021; Ramos & Cuamea, 2023; Suprayogi et al., 2025). Despite increasing competition among dental clinics and the growing emphasis on patient-centered care, many clinics still struggle to effectively manage service failures and patient complaints, which often lead to negative emotions, switching behavior, and declining revisit intention.

Revisit intention refers to a consumer's desire to reuse a service based on prior experiences and evaluations of service quality, image, and satisfaction. Sumarni et al. (2024) explain that positive service experiences create satisfaction, which encourages repeat visits. Likewise, Sukosyah et al. (2025) view revisit intention as a form of behavioral loyalty arising from consumers' assessments of value and satisfaction from

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previous encounters. In digital service contexts, Apidana and Prasetyo (2023) argue that revisit or repeat purchase intention signals the success of long-term relationships influenced by trust, service quality, and satisfaction.

The concept of forgiveness has gained increasing attention in marketing as consumer forgiveness, particularly in the context of service failure and recovery. Customer forgiveness plays a crucial role in repairing damaged relationships by encouraging positive word-of-mouth, improving service experiences, and restoring trust (Özdemir, 2023; Kim et al., 2023). At the same time, customer loyalty remains a key organizational objective, as loyal customers are less sensitive to external influences, generate higher lifetime value, and sustain long-term relationships through repeat patronage (Low et al., 2013).

To gain a competitive advantage, companies must manage post-purchase processes effectively, particularly complaint handling, as service failures are inevitable in service delivery. Customers who experience service failures often express complaints directly or through third parties, which can rapidly spread via offline and online channels, especially through social media, threatening organizational sustainability (Ellyawati, 2015; Ellyawati, 2017; Ozuem et al., 2024; Abashidze, 2024). When service performance falls short of expectations, customers tend to switch providers and share negative reviews, highlighting the importance of effective service recovery, including appropriate compensation, to restore satisfaction (Edström et al., 2022; Gannon et al., 2022; Hall & Hyodo, 2023; Amoako et al., 2023). Service quality perceptions are shaped by service outcomes, delivery processes, timing, and provider behavior, and failures in these areas often trigger negative customer emotions (Garg, 2013; Sukhu & Bilgihan, 2023). Although prior studies have examined service failure, service recovery, and customer loyalty, limited research has explored the mediating role of customer forgiveness in linking service-related factors to revisit intention, particularly in the context of dental healthcare services in Indonesia.

The novelty of this study lies in integrating service failure, service recovery, and customer forgiveness to explain patient revisit intention in Indonesian dental clinics, offering a more comprehensive perspective on post-service evaluation and long-term loyalty. This study aims to investigate further the influence of service failure, service recovery, and customer forgiveness on customer loyalty. Using a quantitative approach and correlation analysis, this study will identify which variable is more significant in shaping patient revisit intention. This research is important because its results can provide strategic insights to dental clinics for enhancing their marketing and service strategies. Without it, clinics might lose potential patients due to a poor understanding of their needs and preferences. Sozo Dental and Teman Dental were chosen because they are well-known national brands with a large, diverse patient base and are recognized for their promotional efforts to attract customers. By analyzing the revisit intentions for these clinics, this study aims to offer practical insights that can benefit other dental clinics in the industry.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

The Influence of Service Failures on Revisit Intention

Previous studies have provided strong evidence regarding the negative consequences of service failure on consumer loyalty. Harrison-Walker (2022) demonstrated that service errors significantly weaken customer loyalty, as they undermine trust and satisfaction with the service provider. Similarly, Nikbin et al. (2011) found that delays in service delivery often lead to customer dissatisfaction and unfavorable evaluations, which may further trigger negative Word-of-Mouth (WOM). In addition to delays, miscommunication also represents a critical form of service failure. For example, promotional materials that advertise services inaccurately, such as posters or online content that do not match the actual services provided at a dental clinic, can create disappointment and negative attitudes among patients.

These issues raise important concerns regarding the extent to which service failure diminishes customer loyalty in the dental clinic context, particularly for clinics that

actively rely on promotional strategies compared to those that do not (Alnawas et al., 2023). Many dental clinics that offer promotions also fail to present clear and representative images of their services on social media platforms. As a result, patients may perceive misleading information or even deception, leading to negative service experiences. Such perceptions not only reduce satisfaction but also lower the likelihood that patients will recommend the clinic to others, thereby weakening loyalty and long-term relational outcomes (Zhang et al., 2022).

H1: Service failures have a negative influence on revisit intention.

The Influence of Service Failures on Service Recovery and Customer Forgiveness

Service recovery is a management process. A company must recognize that a service failure has occurred, identify the reasons for the failure, evaluate the outcome of the incident, and implement appropriate management activities to correct the failure. From this perspective, service recovery can be defined as the activities a company undertakes in response to a service failure. Gao et al. (2022) argue that errors in the service process are frequently unexpected, resulting in consumer dissatisfaction and disappointment. The service provider must provide compensation to mitigate the negative customer assessment and reestablish the relationship between the parties involved. This method is recognized as a strategy for service recovery (Huang et al., 2024).

Consumer forgiveness can be defined as a positive and constructive consumer reaction to service failure. This involves consumers seeking retribution, engaging in resistance, forming alliances, or engaging in other negative behaviors toward service providers who fail to meet their expectations (Wilson et al., 2022). Forgiveness by consumers is a complicated process that involves motivational, emotional, and cognitive reactions to non-violent incidents. The process of forgiveness starts with a cognitive reaction, which then results in emotional attenuation and motivating effects (Özdemir, 2023; Yoruk et al., 2025). Forgiveness is typically conceptualized as a deliberate process that transforms negative, vengeful responses into positive ones. The forgiveness process comprises two distinct aspects: the release of accumulated resentment and anger, which can lead to deep-seated pain, and the adoption of positive thoughts, feelings, and actions toward the individual who has inflicted harm. Consumer marketers are increasingly focused on comprehending forgiveness and its impact on behavior after service failures (Alwanas et al., 2023). The commonly examined results include word-of-mouth dynamics and various retention metrics (Harrison-Walker, 2022). Consequently, a negative relationship exists between service failures and customer forgiveness.

H2: Service failures have a negative influence on service recovery.

H3: Service failures have a negative influence on customer forgiveness.

The Influence of Service Recovery and Customer Forgiveness on Revisit Intention

The concept of intention refers to an individual's tendency to engage in certain behaviors driven by expected benefits, and in healthcare, it reflects patients' willingness to return to medical institutions after receiving treatment (Kotler & Keller, 2012). Customer loyalty is commonly explained through four dimensions: affective loyalty (emotional preference for reuse), conative loyalty (commitment to reuse), action loyalty (actual repeated use), and cognitive loyalty, which is based on rational evaluations such as price and quality and is therefore the most fragile (Ladeira et al., 2024). In healthcare studies, revisit intention is often measured through the desire to continue using services and the willingness to recommend them to others (Kim et al., 2017; Pighin et al., 2022). From a managerial perspective, revisit intention depends on how effectively healthcare providers deliver high-quality services and positive experiences to foster long-term relationships. In the dental context, revisit intention refers to a patient's desire to return to the same dental clinic for future treatment, which is crucial for institutional revenue, reputation, and competitiveness.

Research by Chou (2015) shows that service recovery plays a significant role in shaping both attitudinal and behavioral loyalty. When service failures are addressed through sincere apologies and clear explanations, customers tend to develop positive attitudes, reflected in favorable word-of-mouth and recommendations. Effective recovery efforts, such as acknowledging staff mistakes, also strengthen trust and encourage customers to repeatedly choose the same service provider (Raza et al., 2023; Singh et al., 2024). Similarly, Muhammad and Gul-e-Rana (2019) found that customer forgiveness has a strong positive effect on attitudinal loyalty, as consumers who forgive service failures demonstrate higher loyalty. Extending this view, Joireman et al. (2016) revealed that customer forgiveness also influences behavioral loyalty, where patients who forgive past failures are more likely to revisit the clinic. Together, these findings highlight the critical roles of service recovery and customer forgiveness in fostering loyalty and provide a solid basis for formulating research hypotheses.

H4: Service recovery has a positive influence on revisit intention.

H5: Customer forgiveness has a positive influence on revisit intention.

The Mediating Influence of Customer Forgiveness and Service Recovery

This study's conceptual framework explains the causal relationships among service failure, service recovery, customer forgiveness, and revisit intention in the context of a dental clinic. Service failure is positioned as the primary independent variable, reflecting gaps between patient expectations and the services received. Forms of service failure, such as delays, misinformation, or unmet service promises, have been shown to generate negative attitudes and reduce loyalty (Foroudi et al., 2025). Harrison-Walker (2022) found that service errors negatively affect loyalty, while Nikbin et al. (2011) confirmed that service failure leads to dissatisfaction and negative word-of-mouth, ultimately lowering revisit intention.

Beyond its direct effect on revisit intention, service failure also influences service recovery, defined as managerial actions to identify and correct service problems (de Mesquita et al., 2023). Severe or repeated failures tend to weaken the perceived effectiveness of recovery efforts, as poorly handled failures intensify dissatisfaction and hinder trust restoration. In addition, customer forgiveness is viewed as a psychological response to service failure, involving cognitive, emotional, and motivational processes that reduce negative reactions and foster positive attitudes (Özdemir, 2023). However, high levels of service failure reduce the likelihood of forgiveness, thereby influencing post-failure behavior (Umar & Saleem, 2022).

Furthermore, service recovery and customer forgiveness are positioned as intervening variables influencing revisit intentions. Chou (2015) found that effective service recovery, such as a sincere apology and clear explanation, can increase customer attitudinal and behavioral loyalty, including the likelihood of repeat use. Meanwhile, customer forgiveness has been shown to increase attitudinal and behavioral loyalty, as customers who choose to forgive service errors are more likely to maintain their relationship with the service provider (Joireman et al., 2016; Muhammad & Gul-e-Rana, 2019; Li et al., 2025). In the context of dental clinics, patients who are able to forgive service errors and evaluate recovery efforts positively are predicted to have higher revisit intentions.

H6: Customer forgiveness has a mediating positive effect between service failures and revisit intention.

H7: Service recovery has a mediating positive effect between service failures and revisit intention.

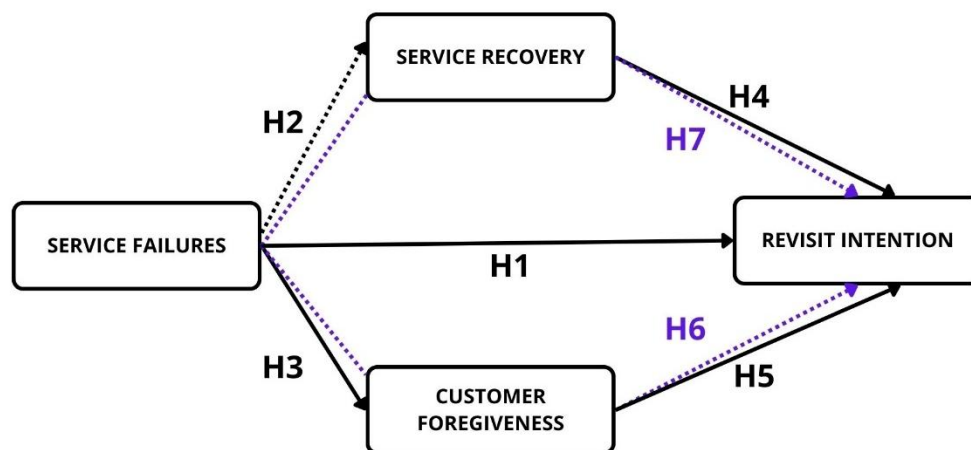


Figure 1. Conceptual Framework

The study's structural model is shown in Figure 1, which also shows the connections between customer forgiveness, service recovery, service failures, and revisit intention. Revisit intention is found to be mostly influenced by service failures, both directly and indirectly. According to the model, poor customer service has an impact on customer forgiveness and service recovery, which in turn affects patients' plans to return to the dentist's office. Furthermore, customer forgiveness and service rehabilitation serve as mediating factors that explain how service failures result in a desire to return. The picture illustrates how successful rehabilitation initiatives and patients' capacity for forgiveness can lessen the detrimental effects of poor service and support patients' plans to come back.

RESEARCH METHODS

This study adopted a cross-sectional explanatory quantitative research approach aimed at examining patients who had previously received treatment at dental clinics that offer promotional programs. The population of the study consisted of individuals who had experienced unfavorable or negative incidents during their dental visits, indicating the occurrence of service failures that required service recovery efforts. To ensure the relevance of respondents to the research objectives, a purposive sampling technique classified under non-probability sampling was employed, allowing the selection of participants who met specific eligibility criteria. A total of 200 valid responses were obtained and used for further analysis. The respondents were adult patients who had visited dental clinics offering promotional programs and had experienced service failures during their treatment, making them suitable for examining revisit intention following service failure and recovery. Data collection was carried out through a structured questionnaire as the primary research instrument to capture respondents' perceptions and behavioral intentions. The questionnaire was distributed online, and data collection was conducted over a one-month period to ensure adequate response coverage.

The collected data were analyzed using Structural Equation Modeling (SEM) with a Partial Least Squares (PLS) approach, as this method is suitable for examining complex relationships among latent variables and does not require strict data distribution assumptions. The analysis was conducted using SmartPLS version 3.0. All measurement items were adapted from well-established scales used in prior studies to ensure content validity. Service failure was measured using four indicators adapted from Um and Lau (2018), while service recovery was assessed using four indicators developed by Thatsaringkharnsakun et al. (2025). Customer forgiveness was measured using two indicators adapted from Tsarenko and Tojib (2012), and revisit intention was measured using one indicator derived from Low et al. (2013). All questionnaire items were evaluated using a seven-point Likert scale, ranging from 1 ("strongly disagree") to 7 ("strongly agree"), to capture respondents' perceptions and behavioral intentions accurately.

The collected data were analyzed to examine the relationships among constructs. The measurement model was evaluated using outer loadings, Cronbach's alpha, composite reliability, HTMT, and VIF to ensure reliability, validity, and absence of multicollinearity. The structural model was assessed using R^2 , Q^2 , F^2 , and CVPAT to evaluate explanatory power, predictive relevance, and effect size. Hypotheses were tested using path coefficients with bootstrapping (5,000 resamples) to determine the significance of the proposed relationships.

RESULTS

The outer model, a crucial part of the PLS-SEM architecture, describes the relationships between the latent construct and the associated indicators. This model assesses how well indicators reflect the latent variable using validity tests like discriminant and convergent validity. Additionally, it uses metrics such as Composite dependability, Cronbach's Alpha, and Average Variance Extracted (AVE) to assess dependability. The outer model ensures that each indicator is accurate and acceptable for evaluating the intended construct.

Table 1. Analysis Descriptive and Outer Loading

Variable	Indicator	Mean	Median	Scale Min	Scale Max	Standard Deviation	Outer Loading
Service Failures (SF)	SF1	4.795	5	1	7	1.511	0.864
	SF2	4.821	5			1.506	0.853
	SF3	4.491	5			1.442	0.808
	SF4	4.603	5			1.378	0.828
	SF5	3.803	4			1.616	0.869
	SF6	3.803	4			1.407	0.75
	SF7	3.842	4			1.466	0.802
	SF8	3.718	4			1.529	0.794
	SF9	4.996	5			1.481	0.768
	SF10	4.671	5			1.499	0.87
Service Recovery (SR)	SR1	2.299	2	1	7	1.640	0.9
	SR2	2.671	2			1.666	0.804
	SR3	2.598	2			1.564	0.856
	SR4	2.671	3			1.499	0.788
	SR5	2.632	2			1.550	0.835
Customer Forgiveness (CF)	CF1	4.996	5	1	7	1.784	0.841
	CF2	4.637	5			1.754	0.767
	CF3	4.829	5			1.808	0.758
	CF4	4.859	5			1.762	0.798
	CF5	4.419	5			1.760	0.799
Revisit Intention (RI)	RI1	2.577	2	1	7	1.958	0.895
	RI2	3.068	3			1.829	0.818
	RI3	2.803	2			1.81	0.854
	RI4	2.957	3			1.766	0.848
	RI5	2.821	3			1.728	0.853

An overview of respondents' opinions of the metrics used to gauge service failure, service recovery, customer forgiveness, and revisit intention is offered by the descriptive analysis shown in Table 1. The SF indicators' mean values vary from 3.7 to 4.9, suggesting that respondents typically view service failures as occurring at a moderate to relatively high level. The mean SR values, on the other hand, are quite low, ranging from 2.3 to 2.7, indicating that the clinic's service recovery attempts are viewed as subpar. In the meantime, the CF indicators reveal comparatively high mean ratings, ranging from 4.4 to 5.0, indicating a considerable inclination among respondents to overlook service shortcomings. The low to moderate mean values of the RI indicators, which range from 2.5 to 3.0, suggest that patients' intentions to return to the clinic are still not very strong. Significant variation in respondents' perceptions is indicated by the existence of relatively substantial standard deviations across a number of metrics. Additionally, the outer loading findings demonstrate that all SF, SR, CF, and RI indicators surpass the suggested

threshold of 0.70, indicating sufficient convergent validity. The most representative indicators for measuring their respective constructs are RI1 and SR1, which have the greatest loading values of 0.895 and 0.900, respectively. The findings show that every measurement indication is reliable and suitable for use in the measurement model.

Table 2. HTMT test

Variable	Customer Forgiveness	Revisit Intention	Service Failures
Revisit Intention	0.552		
Service Failures	0.474	0.678	
Service Recovery	0.326	0.607	0.62

Table 2 HTMT results demonstrate that every correlation value between constructs, including the customer forgiveness–revisit intention (0.552), Service failures–service recovery (0.620), and service failures–revisit intention (0.678), is below the 0.85 cutoff. This suggests that there were no discriminant validity problems, enabling each variable to stand out from the others. As a result, there are major conceptual differences across the four constructs, SF, SR, CF, and RI, in the paradigm.

Table 3. VIF, R Square & Q Square Test

Variable	Variance Inflation Factor			R-Square	Q Square
	Customer Forgiveness	Revisit Intention	Service Recovery		
Customer Forgiveness		1.226		0.181	0.168
Revisit Intention				0.51	0.391
Service Failure	1.000	1.681	1.000		
Service Recovery		1.500		0.331	0.314

Based on the Variance Inflation Factor (VIF) results in Table 3, all variables show VIF values below the threshold of 5, including customer forgiveness (1.226), service failure (1.000–1.681), and service recovery (1.500), indicating the absence of multicollinearity issues and confirming that each construct can be analyzed independently. The model's explanatory power, as reflected by the R-square values, indicates that service failure explains 18.1% of the variance in customer forgiveness ($R^2 = 0.181$) and 33.1% of the variance in service recovery ($R^2 = 0.331$), while revisit intention shows the highest R-square ($R^2 = 0.510$), suggesting that 51% of its variance is explained by the combined effects of customer forgiveness, service recovery, and service failure, reflecting moderate predictive strength. Furthermore, the Q^2 predict results demonstrate limited predictive relevance for customer forgiveness ($Q^2 = 0.168$) and moderate predictive relevance for service recovery ($Q^2 = 0.314$) and revisit intention ($Q^2 = 0.391$), indicating that the model has adequate predictive capability, particularly for constructs related to service experience and patient revisit decisions.

Table 4. F Square

Path	F-Square	Category
Customer Forgiveness -> Revisit Intention	0.112	Medium
Service Failure -> Customer Forgiveness	0.222	Medium
Service Failure -> Revisit Intention	0.17	Medium
Service Failure -> Service Recovery	0.495	Large
Service Recovery -> Revisit Intention	0.092	Small

The independent factors' varying degrees of effect on the dependent variable are shown by the F-squared values in Table 4. With a large category (0.495), the association between service failure and service recovery has the most effect, suggesting that service failure has a major impact on service recovery capabilities. The relationships service failure on patient

forgiveness (0.222), service failure on revisit intention (0.17), and customer forgiveness on revisit intention (0.112) are included in the medium category, indicating a fairly important effect but not as large as the influence on service recovery. Meanwhile, service recovery on revisit intention only has a small influence (0.092), indicating that service recovery contributes only slightly to revisit intention compared to other factors.

Table 5. Model Comparison: PLS-SEM vs IA and LM

Variable	PLS-SEM vs Indicator Average (IA)		PLS-SEM vs Linear Model (LM)	
	Average Loss Difference	p-value	Average Loss Difference	p-value
Customer Forgiveness	-0.329	0.021	-0.057	0.432
Service Recovery	-0.547	0.015	-0.049	0.085
Revisit Intention	-0.955	0.001	0.053	0.420
Overall	-0.610	0.000	-0.018	0.597

The CVPAT results show in Table 5 that the PLS-SEM model has different predictive capabilities depending on the comparison approach. When compared with the Indicator Average (IA) approach, all variables in the model namely customer forgiveness (Average Loss Difference = -0.329 , $p = 0.021$), service recovery (-0.547 , $p = 0.015$), and revisit intention (-0.955 , $p = 0.001$) showed a significant negative average loss difference, as did the overall (overall = -0.610 , $p = 0.000$). Because it generates fewer prediction errors for each variable and the whole model, the PLS-SEM model outperforms the IA technique in terms of predictive power. In contrast, when compared with the linear model, the Average Loss Difference value is relatively small and insignificant (customer forgiveness = -0.057 , $p = 0.432$; service recovery = -0.049 , $p = 0.085$; revisit intention = 0.053 , $p = 0.420$; overall = -0.018 , $p = 0.597$), indicating that the predictive ability of PLS-SEM is comparable to that of a simple linear model. Thus, these results confirm that PLS-SEM is superior in capturing more complex relationships between variables compared to the average indicator approach, but its predictive effectiveness over the linear model is not significantly different, especially in the context of the influence of service recovery and customer forgiveness on revisit intention.

Table 6. Hypothesis Testing (Direct & Indirect Effect)

Relationship	Standardized Coefficient	t-statistics	P values	Decision
H1: Service failures have a negative direct influence on revisit intention.	-0.375	3.727	0.000	Accepted
H2: Service failures have a negative direct influence on service recovery	-0.575	7.321	0.000	Accepted
H3: Service failures have a negative direct influence on customer forgiveness	-0.426	5.684	0.000	Accepted
H4: Service recovery has a positive direct influence on revisit intention.	0.26	2.978	0.003	Accepted
H5: Customer forgiveness has a positive direct influence on revisit intention.	0.26	5.119	0.000	Accepted
H6: Service failure -> patient forgiveness -> revisit intention	-0.111	4.253	0.000	Accepted
H7: Service failure -> Service recovery -> revisit intention	-0.15	2.376	0.018	Accepted

Table 6 presents the hypothesis testing results, showing that service failure has a significant negative effect on revisit intention (H1: $\beta = -0.375$; $p = 0.000$), indicating that higher levels of service failure reduce patient loyalty and weaken long-term relationships. Service failure also negatively affects service recovery (H2: $\beta = -0.575$; $p = 0.000$), suggesting that frequent or severe failures hinder institutions' ability to perform effective recovery, largely due to accumulated dissatisfaction and diminished trust. In addition, service failure has a significant negative effect on customer forgiveness (H3: $\beta = -0.426$;

$p = 0.000$), implying that poor service experiences lower patients' willingness to forgive and negatively influence their emotional responses toward healthcare providers.

In contrast, service recovery positively and significantly influences revisit intention (H4: $\beta = 0.26$; $p = 0.003$), demonstrating that effective recovery efforts enhance patient trust and encourage return visits. Similarly, customer forgiveness has a significant positive effect on revisit intention (H5: $\beta = 0.26$; $p = 0.000$), highlighting forgiveness as an important emotional mechanism in restoring relationships after service failure. Furthermore, mediation analysis shows that customer forgiveness significantly mediates the relationship between service failure and revisit intention ($\beta = -0.111$; $p = 0.000$), indicating that service failure indirectly reduces revisit intention through diminished forgiveness. Service recovery also mediates this relationship ($\beta = -0.150$; $p = 0.018$), suggesting that inadequate recovery amplifies the negative impact of service failure on patients' intention to return. These findings emphasize that while service failure undermines revisit intention, effective service recovery and the management of customer forgiveness are critical mechanisms for sustaining patient loyalty and encouraging repeat visits.

The IPMA Figure 2 shows that CF and SR have an importance level of 0.26, indicating that both are important variables in improving RI. However, SR performance is very low (26.06), indicating that despite its importance, service recovery efforts still need significant improvement. Conversely, SF has a negative importance (-0.635), indicating that the lower the service failure, the greater the impact on improving RI, even though SF performance is at a moderate level (56.54).

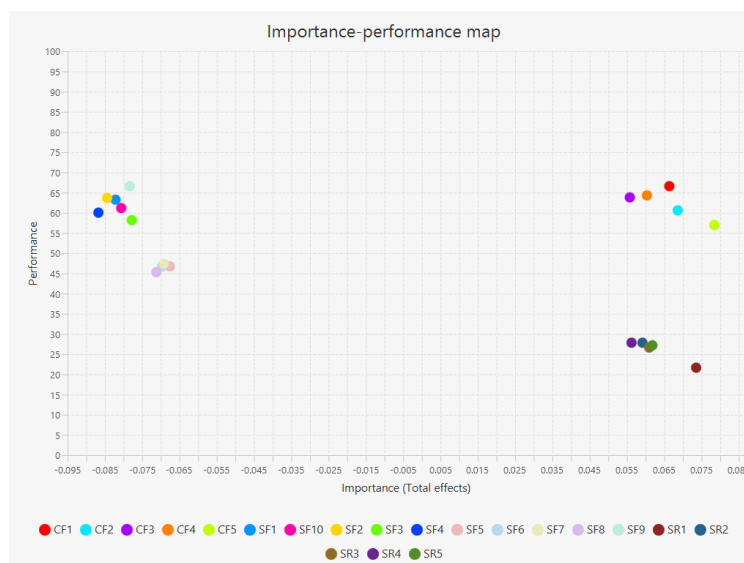


Figure 2. IPMA Map Indicator

The IPMA indicator Figure 2 shows improvement priorities based on the importance and performance of each indicator. In the CF construct, the indicator with the highest importance is CF5 (0.078), so it needs to be a focus of improvement even though its performance is relatively moderate. In SF, indicators SF4, SF2, and SF1 have the highest negative importance, indicating that reducing failures in these aspects is very important even though their performance varies. For the SR construct, indicator SR1 has the highest importance (0.073), but its performance is very low (21.65), so it is a top priority for improvement in the service recovery improvement strategy.

DISCUSSION

The results indicate that service failure has a significant negative effect on customer forgiveness, service recovery, and revisit intention, consistent with prior studies. Chou (2015) showed that high service failure weakens customer perceptions and loyalty, while

Ellyawati (2017) found that Indonesian customers are highly sensitive to service failures, leading to reduced forgiveness. This is further supported by Joireman et al. (2016), who noted that service failure diminishes trust and heightens negative emotions, thereby inhibiting forgiveness. The findings also show that service recovery has a significant positive effect on revisit intention. This aligns with Gao et al. (2022), who emphasized the role of effective recovery in restoring customer relationships, and Edström et al. (2022), who highlighted targeted recovery in rebuilding fairness and satisfaction. In healthcare settings, Kim et al. (2017) similarly found that service recovery quality strongly influences patient satisfaction and loyalty, supporting the relevance of these results in the dental clinic context.

Previous studies confirm the positive effect of customer forgiveness on revisit intention. Muhammad and Gul-e-Rana (2019) found that strong interpersonal relationships and effective service recovery enhance forgiveness, leading to favorable behavioral intentions. In healthcare, Harrison-Walker (2022) highlighted forgiveness as linked to empathy, clinician reliability, and organizational recovery from failures, while Özdemir (2023) emphasized it as a psychological mechanism that restores relationships and encourages return behavior. Prior research also shows the indirect effect of service failure on revisit intention via forgiveness and recovery. Garg (2013) noted that effective recovery can create a service recovery paradox, boosting loyalty after resolved failures, and Nikbin et al. (2011) found that fair recovery processes strengthen reputation and repurchase intentions. In dental clinics, Park et al. (2021) demonstrated that service experience, complaint handling, and staff relationships significantly influence revisit intentions, reinforcing forgiveness and recovery as key mediators.

The findings align with classic marketing management theory, emphasizing that minimizing service failures and enhancing service recovery are crucial for maintaining customer loyalty (Kotler & Keller, 2012). This is particularly relevant for dental clinics, where service quality and patient experience are key to business sustainability (Ekasari & Sulistiadi, 2020). Recent studies also confirm that the relationship between service failure, service recovery, and loyalty applies across sectors, including digital services (Huang et al., 2024). IPMA results highlight the strategic importance of specific indicators within customer forgiveness, service failure, and service recovery for prioritizing service improvements. Notably, indicator CF5 has the highest importance, marking it as a key focus despite moderate performance. This supports Chou (2015), who stressed that organizational responses to failures shape post-failure relationship quality, and Ellyawati (2017), who found that poorly managed failures increase dissatisfaction and weaken loyalty, emphasizing CF5's role in perceived service reliability.

Within the service failure construct, indicators SF4, SF2, and SF1 show the highest negative importance values, indicating an urgent need to reduce failures in these areas. This aligns with findings by Huang et al. (2024), who showed that lower service failure rates increase satisfaction and repeat visit intentions. Similarly, Low et al. (2013) noted that repeated minor failures can erode customer tolerance and heighten disappointment. In healthcare settings, Kim et al. (2017) emphasized that failures in interpersonal service processes strongly undermine patient loyalty. Accordingly, managerial priorities should focus on operational improvements that directly reduce the likelihood of core service failures.

Within the service recovery construct, indicator SR1 is the top priority due to its high importance and very low performance, indicating a critical weakness in the recovery strategy. This aligns with Gao et al. (2022), who emphasize that effective recovery from initial explanation and empathy to final resolution is essential for restoring customer relationships, while Edström et al. (2022) warn that inappropriate efforts may backfire if inconsistent or excessive. In healthcare, Harrison-Walker (2022) notes that accurate recovery fosters forgiveness and long-term trust. Therefore, improving SR1 is crucial for both recovery effectiveness and strengthening emotional bonds with patients. The IPMA-based priorities reflect marketing management principles emphasizing factors most influential on customer perceptions (Kotler & Keller, 2012) and strategic service

development for optimal patient experience (Ekasari & Sulistiadi, 2020). These recommendations extend beyond operations to strategic efforts that build satisfaction, trust, and loyalty, supported by Joireman et al. (2016) and Muhammad & Gul-e-Rana (2019), reinforcing that minimizing errors, effective recovery, and rebuilding emotional connections are key to sustaining revisit intention in dental clinics.

CONCLUSION

This study demonstrates that service failure has a significant negative impact on customer forgiveness, service recovery, and revisit intention, indicating that more severe failures reduce patients' willingness to forgive, weaken recovery perceptions, and lower the likelihood of returning. In contrast, service recovery and customer forgiveness show significant positive effects on revisit intention, confirming their critical roles in restoring post-failure relationships. Mediation analysis further reveals that service recovery and customer forgiveness significantly transmit the effects of service failure to revisit intention, underscoring their capacity to mitigate negative outcomes. The model exhibits good predictive quality, and the IPMA results identify service recovery as highly important yet underperforming, making it the primary area for managerial improvement.

Managerial implications suggest that dental clinics should focus not only on preventing service failures but also on strengthening recovery processes, particularly early-stage responses that emphasize empathy, clarity, and timely resolution. Enhancing these elements can foster forgiveness, rebuild trust, and encourage repeat visits. Strategically, service recovery should be integrated into long-term relationship management rather than treated as a short-term fix. This study has limitations, including its focus on dental clinics with promotional programs and the use of a cross-sectional design, which may limit generalizability and causal inference. Future research should test the model across other healthcare and service settings, employ longitudinal designs to capture behavioral change over time, and incorporate additional variables such as trust, perceived fairness, or emotional responses to enrich understanding of post-failure consumer behavior.

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