

# Establishment of Standardized Operational System for QC Pet Care: A SERVQUAL-Model Gap Measurement Analysis in Improving Service Quality Consistency

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**Abstract:** *This study analyzes service quality and customer satisfaction at QC Pet Care using an integrated quantitative and qualitative approach. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to examine the relationship between SERVQUAL dimensions and customer satisfaction, while SERVQUAL gap analysis identified discrepancies between customer expectations and perceptions. Interviews with customers and staff provided deeper insights into service issues and operational challenges. The results show that the Reliability dimension has the largest negative gap, indicating that service performance does not fully meet customer expectations. Key issues include unclear consultation processes, inconsistent service delivery, ineffective communication, inadequate complaint handling, and operational constraints. Based on these findings, the study proposes an integrated service improvement framework comprising a service blueprint, Standard Operating Procedures (SOPs), daily control sheets, and continuous evaluation through the Plan-Do-Check-Act (PDCA) cycle. The proposed framework offers practical guidance for systematically improving service quality and enhancing long-term customer satisfaction, particularly for small businesses in the pet care industry.*

**Keywords:** Pet Industry, Service Blueprint, Service Quality, SERVQUAL, Standard Operating Procedures

## I. INTRODUCTION

QC Pet Care is a veterinary clinic established in 2023 in Depok, Indonesia, serving a predominantly lower-to-middle-income community. The clinic prioritizes affordable and compassionate care over profit; however, it has struggled to achieve sustainable business performance. In 2025, its monthly revenue target of Rp20,000,000 was achieved only twice, indicating inconsistent financial performance. As a service-based healthcare business, QC Pet Care depends heavily on customer satisfaction, repeat visits, and positive word-of-mouth, making service quality a critical factor in business sustainability.

One of the most visible indicators of service quality issues was a 1-star customer review related to the handling of payment procedures for hospitalized pets. The customer perceived the payment enforcement process as disrespectful because the clinic failed to communicate its policy clearly. This incident highlighted weaknesses in communication, complaint handling, and service consistency, ultimately damaging the clinic's reputation and potentially reducing customer trust and retention.

The underlying issue extends beyond a single service failure. QC Pet Care operates without standardized service procedures, resulting in inconsistent customer interactions and service delivery. Staff rely on individual judgment when handling customers, creating variations in service quality and increasing the likelihood of misunderstandings. These operational inconsistencies not only affect customer satisfaction but also contribute to the clinic's inability to maintain stable revenue.

From a service management perspective, these problems reflect gaps in service design and delivery as described by the SERVQUAL framework. The absence of clear Standard Operating Procedures (SOPs), structured communication guidelines, and consistent service processes leads to discrepancies between customer expectations and perceived service quality. Consequently, improving operational consistency has become essential for enhancing customer satisfaction and supporting long-term business performance.

This study aims to evaluate the relationship between service quality and customer satisfaction at QC Pet Care using the SERVQUAL model and Partial Least Squares Structural Equation Modeling (PLS-SEM). It also identifies service

quality gaps and explores their root causes through qualitative interviews with customers and staff. Based on the findings, the study proposes an integrated service improvement framework, including a service blueprint, Standard Operating Procedures (SOPs), daily control sheets, and the Plan-Do-Check-Act (PDCA) cycle to improve service consistency, customer satisfaction, and business performance.

## II. LITERATURE REVIEW

This study is grounded in service quality literature that links operational performance, customer satisfaction, and business outcomes. The Service Profit Chain proposed by Heskett et al. (1994) explains that internal service quality improves employee performance, leading to higher customer satisfaction, customer loyalty, and ultimately stronger financial performance. This framework provides the theoretical basis for understanding how operational improvements can contribute to sustainable business performance.

In professional healthcare services, customers often find it difficult to evaluate technical outcomes and therefore rely more on the service delivery process when assessing quality. Grönroos (1982, 1984, 1990) distinguishes service quality into technical (outcome) quality and functional (process) quality, while Kowalik and Klimecka-Tatar (2018) further emphasize the importance of managing service quality through a process approach. Consequently, this study focuses on process quality because communication, responsiveness, and consistency are more directly perceived by customers than technical treatment outcomes.

To measure service quality, this study adopts the SERVQUAL model developed by Parasuraman et al. (1985, 1988), which conceptualizes service quality as the gap between customer expectations and perceptions across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. SERVQUAL has been widely validated in healthcare settings (Ko & Chou, 2020) and provides a practical diagnostic framework for identifying service deficiencies. The accompanying SERVQUAL Gap Model (Parasuraman et al., 1985) further explains that service failures often originate from internal organizational gaps, particularly inadequate service design and inconsistent service delivery.

To develop operational improvements, this study employs service blueprinting, introduced by Shostack (1984), which maps customer interactions, frontline and backstage activities, and supporting processes. Service blueprinting has been widely applied in healthcare to improve service coordination and stakeholder collaboration (Lim et al., 2014; Altman et al., 2018; Lin et al., 2021; Koo et al., 2024) and is considered more suitable than customer journey mapping for analyzing operational processes (Alvarez et al., 2020; Rosenbaum et al., 2016; Gibbons, 2017). Finally, the proposed improvements are evaluated using the Plan-Do-Check-Act (PDCA) cycle, a continuous improvement framework popularized by Deming (1993, 2000) and widely applied for systematic implementation and evaluation of quality improvement initiatives (Isniah et al., 2020).

## III. METHODOLOGY

This study employed a mixed-methods design combining quantitative and qualitative approaches to evaluate service quality at QC Pet Care and develop operational improvement strategies. The quantitative phase identified service quality gaps using the SERVQUAL model, while the qualitative phase explored the underlying causes of the identified gaps. The overall research design is illustrated in Figure 1.

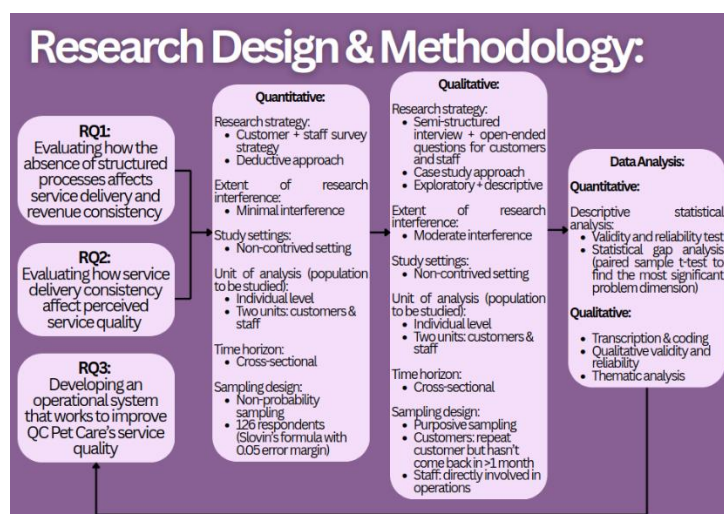


Figure 1. Research Design & Methodology

The quantitative component consisted of two surveys. First, customer perceptions and expectations were measured using the standardized 22-item SERVQUAL questionnaire developed by Parasuraman et al. (1990). Second, a staff questionnaire measured four internal operational dimensions: Alignment, Communication, Role Clarity, and SOP System. These dimensions were adapted from McKinsey 7S (Waterman et al., 1980), Routine Dynamics (Feldman & Pentland, 2003), Role Stress Theory (Kahn et al., 1964), and Two-way Symmetrical Communication (Grunig et al., 1992).

The qualitative phase employed semi-structured interviews with customers and staff. Customers were selected from repeat clients who had not revisited the clinic for more than one month, while active veterinarians and paramedical staff participated in staff interviews. Interview findings were used to explain and validate the quantitative results.

### 3.1 Data Collection

Customer respondents consisted of pet owners who had previously used QC Pet Care's services. Convenience sampling was applied because participation was voluntary. The minimum sample size was determined using Slovin's formula, resulting in a required sample of 126 respondents from a population of 184 customers.

$$n = \frac{N}{1 + Ne^2}$$

Figure 2. Slovin's Formula

$$\begin{aligned} n &= \frac{184}{1 + 184(0.05)^2} \\ n &= \frac{184}{1 + 184(0.0025)} \\ n &= \frac{184}{1 + 0.46} \\ n &= \frac{184}{1.46} \approx 126.03 \end{aligned}$$

Figure 3. Calculation for this study

The SERVQUAL questionnaire measured five dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy using a seven-point Likert scale.

Table 1. SERVQUAL Questionnaire Items

| Di-<br>men-<br>sion | Qu-es-<br>tionNo | Code<br>(Expected) | Code<br>(Perceived) | Service Attributes                                                  | Code<br>(Gap) |
|---------------------|------------------|--------------------|---------------------|---------------------------------------------------------------------|---------------|
| Tang-<br>ible       | 1                | T1.E               | T1.P                | Clinic has modern-looking appliances.                               | T1.G          |
|                     | 2                | T2.E               | T2.P                | Medical instruments and physical facilities are visually appealing. | T2.G          |
|                     | 3                | T3.E               | T3.P                | Employees' uniforms are clean, nice, and neat.                      | T3.G          |
|                     | 4                | T4.E               | T4.P                | Promotional materials of clinic are visually appealing              | T4.G          |

|                               |   |       |       |                                                                    |       |
|-------------------------------|---|-------|-------|--------------------------------------------------------------------|-------|
| Reli-<br>abili-<br>ty         | 1 | RL1.E | RL1.P | Clinic serves any scheduled service right on time                  | RL1.G |
|                               | 2 | RL2.E | RL2.P | Appropriate responses to problems that arises                      | RL2.G |
|                               | 3 | RL3.E | RL3.P | Employees serve the right treatments since the start               | RL3.G |
|                               | 4 | RL4.E | RL4.P | Clinic provides services within due time                           | RL4.G |
|                               | 5 | RL5.E | RL5.P | Clinic did proper and correct documentation on procedure           | RL5.G |
| Res-<br>pon-<br>sive-<br>ness | 1 | R1.E  | R1.P  | Employees let the customer know when the service will be delivered | R1.G  |
|                               | 2 | R2.E  | R2.P  | Employees serve the customer with quick response time              | R2.G  |
|                               | 3 | R3.E  | R3.P  | Employees always willing to help customer                          | R3.G  |
|                               | 4 | R4.E  | R4.P  | Employees will never be too busy to help customer                  | R4.G  |
| Assu-<br>rance                | 1 | A1.E  | A1.P  | Employees able to grow customer trust                              | A1.G  |
|                               | 2 | A2.E  | A2.P  | Customers feel safe to do transaction in clinic                    | A2.G  |
|                               | 3 | A3.E  | A3.P  | Employees consistently act polite toward customers                 | A3.G  |
|                               | 4 | A4.E  | A4.P  | Employees have adequate knowledge to answer questions              | A4.G  |
| Em-<br>pathy                  | 1 | E1.E  | E1.P  | Clinic shows individual interest toward customer and pet           | E1.G  |
|                               | 2 | E2.E  | E2.P  | Clinic provides comfortable service hours for customers            | E2.G  |
|                               | 3 | E3.E  | E3.P  | Employees show personal attention towards customer and pet         | E3.G  |
|                               | 4 | E4.E  | E4.P  | Clinic prioritize customer's and pet's best interests              | E4.G  |

|  |   |      |      |                                                          |      |
|--|---|------|------|----------------------------------------------------------|------|
|  | 5 | E5.E | E5.P | Employees understand customer's and pet's specific needs | E5.G |
|--|---|------|------|----------------------------------------------------------|------|

The staff questionnaire employed a five-point Likert scale to assess Alignment, Communication, Role Clarity, and SOP System.

Table 2. Staff Questionnaire Dimensions

| Dimension          | Question No. | Code | Internal Attributes                                                        |
|--------------------|--------------|------|----------------------------------------------------------------------------|
| Alignment          | 1            | A1   | Staff understands vision and mission                                       |
|                    | 2            | A2   | Daily task is aligned with the clinic's intention                          |
|                    | 3            | A3   | Staff feels involved in reaching clinic's goals                            |
|                    | 4            | A4   | Managerial decisions are consistent and aligned with the clinic's priority |
| Communi-<br>cation | 1            | C1   | Management directs the staff clearly                                       |
|                    | 2            | C2   | All staff are coordinated and aligned with one another                     |
|                    | 3            | C3   | Good communication between different roles                                 |
| Role Clarity       | 1            | RC1  | Staff understands their role clearly                                       |
|                    | 2            | RC2  | Staff understands their responsibility clearly                             |
| SOP System         | 1            | S1   | Staff SOP is documented clearly                                            |
|                    | 2            | S2   | Staff understands SOP related to their role                                |
|                    | 3            | S3   | SOP is easy to follow in daily setting                                     |
|                    | 4            | S4   | SOP consistently followed by all staff                                     |
|                    | 5            | S5   | Staff received adequate training regarding SOP                             |
|                    | 6            | S6   | SOP helps staff deliver consistent service                                 |
|                    | 7            | S7   | SOP renewed when needed                                                    |
|                    | 8            | S8   | SOP gives clear direction for when problem arises                          |
|                    | 9            | S9   | Clarity Gap: SOP clear enough but hard to follow in reality                |

Semi-structured interview guides were developed for customers and staff to provide contextual explanations for quantitative findings.

Table 3. Customer Interview Guide

|                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Opening</b>                                                                                                                                               |
| "Can you tell me about your last visit to QC Pet Care?"                                                                                                      |
| "How often do you usually visit a vet?"                                                                                                                      |
| <b>Linking to Service Quality (SERVQUAL Reflection)</b>                                                                                                      |
| "When deciding to visit, what matters most to you: visuals, speed, trust, comfort, or care? Why? How?" (interviewer asks for details for those 5 dimensions) |
| "What would make you visit even during inconvenient conditions (like rain)?"                                                                                 |
| <b>Closing</b>                                                                                                                                               |
| "If you could suggest one improvement related to communication or accessibility, what would it be?"                                                          |

Table 4. Staff Interview Guide

|                                                                       |
|-----------------------------------------------------------------------|
| <b>Role Context</b>                                                   |
| "Can you describe your role and daily responsibilities?"              |
| "What does "good service" mean to you in this clinic?"                |
| <b>Internal Standards</b>                                             |
| <i>Personal Understanding:</i>                                        |
| "What kind of service experience do you aim to deliver to customers?" |
| "What do you think customers expect from QC Pet Care?"                |
| <i>Reality vs Expectation:</i>                                        |

|                                                                                               |
|-----------------------------------------------------------------------------------------------|
| "Do you feel the clinic consistently meets those expectations? Why or why not?"               |
| "What are the main challenges in delivering high-quality service?"                            |
| <i>Link to SERVQUAL:</i>                                                                      |
| "Which is hardest to deliver: speed (responsiveness), consistency (reliability), or empathy?" |
| <b>SOP Interpretation &amp; Implementation</b>                                                |
| <i>Clarity:</i>                                                                               |
| "Are SOPs clearly defined for your tasks?"                                                    |
| "How did you learn or get trained on these SOPs?"                                             |
| <i>Practical Use:</i>                                                                         |
| "Are SOPs easy to follow in real situations? Why or why not?"                                 |
| "Can you give an example where SOPs were unclear or difficult to apply?"                      |
| <i>Consistency:</i>                                                                           |
| "Do all staff follow SOPs in the same way?"                                                   |
| "What happens when someone does not follow SOP?"                                              |
| <i>Probe for gap:</i>                                                                         |
| "Is the issue the SOP itself, or the way it is implemented?"                                  |
| <b>Payment Conflicts</b>                                                                      |
| <i>Experience:</i>                                                                            |
| "Have you experienced conflicts with customers regarding payment?"                            |
| "What are the most common causes?"                                                            |
| <i>Customer Perspective:</i>                                                                  |

|                                                                                             |
|---------------------------------------------------------------------------------------------|
| "Why do you think customers feel confused or dissatisfied about pricing?"                   |
| <i>SOP &amp; Communication Link:</i>                                                        |
| "Are there SOPs for explaining pricing to customers?"                                       |
| "Do staff explain prices before or after treatment?"                                        |
| <i>Improvement:</i>                                                                         |
| "What would reduce payment-related conflicts?"                                              |
| (Probe: price transparency, estimates, communication training)                              |
| <b>Internal to External Link</b>                                                            |
| "How do internal issues (SOP clarity, communication, workload) affect customer experience?" |
| "Do you feel supported by management to deliver good service?"                              |
| <i>Probe:</i>                                                                               |
| "Can you give a real example where internal problems affected a customer?"                  |

### 3.2 Data Analysis

#### Quantitative Analysis

SERVQUAL data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS following the recommendations of Hair et al. (2022). Reliability was assessed using Cronbach's Alpha and Composite Reliability, while validity was evaluated through indicator loadings, Average Variance Extracted (AVE) (Fornell & Larcker, 1981), Fornell-Larcker Criterion (Fornell & Larcker, 1981), and Heterotrait-Monotrait Ratio (HTMT) (Henseler et al., 2015).

Table 5. PLS-SEM Measurement Criteria

| Metric Type | Test                  | Academic Threshold |
|-------------|-----------------------|--------------------|
| Reliability | Cronbach's Alpha      | > 0.70             |
| Reliability | Composite Reliability | 0.70Value 0.90     |

|                       |                                     |                                                                                  |
|-----------------------|-------------------------------------|----------------------------------------------------------------------------------|
| Convergent Validity   | Indicator Loadings (Outer Loadings) | 0.708 (strong), 0.40Value 0.708 (evaluate further), 0.40 (weak, must be deleted) |
| Convergent Validity   | Average Variance Extracted          | 0.50                                                                             |
| Discriminant Validity | HTMT                                | < 0.85 (strict) or < 0.90 (lenient)                                              |
| Discriminant Validity | Fornell-Larcker                     | Diagonal (AVE) > Off-diagonal correlations                                       |

Descriptive statistics were used to calculate SERVQUAL gaps using:

$$\text{SERVQUAL Gap} = P - E$$

where P represents perceived service and E represents expected service. Negative values indicate that perceived performance falls below customer expectations. Statistical significance between expectation and perception scores was tested using paired-sample t-tests ( $p < 0.05$ ) in IBM SPSS.

Because only seven current and former staff members participated, staff questionnaire data were analyzed descriptively by comparing mean scores across the four operational dimensions to prioritize internal improvement areas.

#### Qualitative Analysis

Interview recordings were transcribed verbatim and analyzed using thematic analysis. Customer responses were coded according to the five SERVQUAL dimensions, while staff responses were coded using the four internal operational dimensions (Alignment, Communication, Role Clarity, and SOP System). This coding approach follows previous SERVQUAL qualitative studies such as Tran et al. (2025).

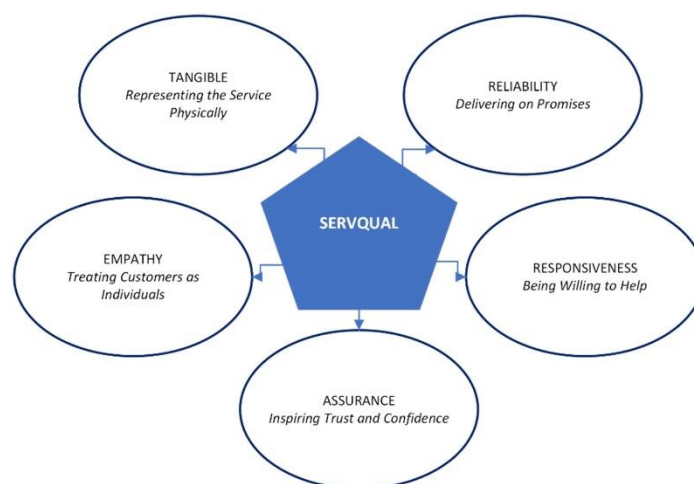


Figure 4. SERVQUAL-based Coding Framework

Emerging themes were compared with the quantitative findings to identify root causes of service quality gaps and guide the development of operational improvements.

#### Data Triangulation

Finally, quantitative SERVQUAL results, staff questionnaire findings, customer interviews, and staff interviews were triangulated to validate the identified service quality issues and formulate an integrated improvement framework consisting of a service blueprint, Standard Operating Procedures (SOPs), daily control sheets, and continuous evaluation using the Plan-Do-Check-Act (PDCA) cycle.

#### IV. DATA ANALYSIS RESULTS

This study employed a mixed-methods approach to identify service quality gaps at QC Pet Care through quantitative and qualitative analyses.

##### 4.1 Quantitative Analysis

##### 4.1.1 Measurement Model Assessment

The SERVQUAL measurement model was evaluated using PLS-SEM in SmartPLS.

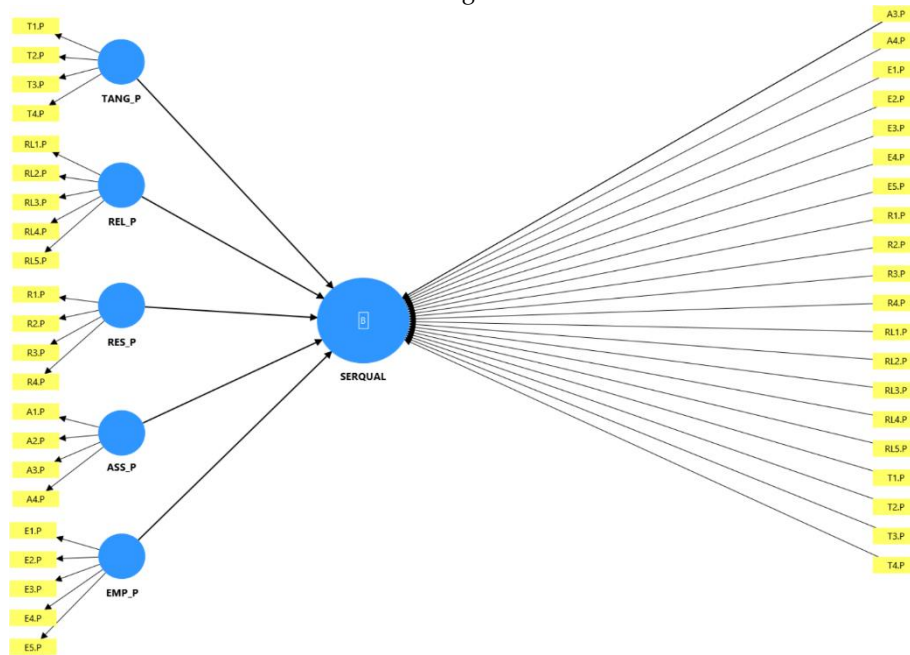


Figure 4.1. SERVQUAL PLS-SEM Measurement Model

Internal consistency reliability was assessed using Cronbach's Alpha and Composite Reliability, while convergent and discriminant validity were evaluated using outer loadings, Average Variance Extracted (AVE), Heterotrait-Monotrait Ratio (HTMT), and the Fornell-Larcker criterion, following Hair et al. (2022), Fornell and Larcker (1981), and Henseler et al. (2015).

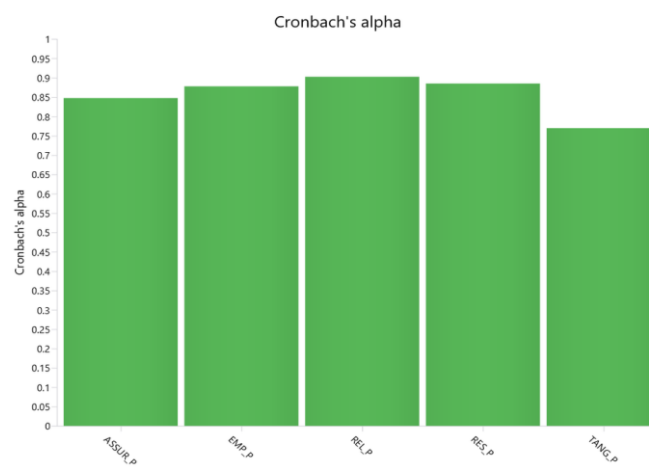


Figure 4.2. Cronbach's Alpha Results

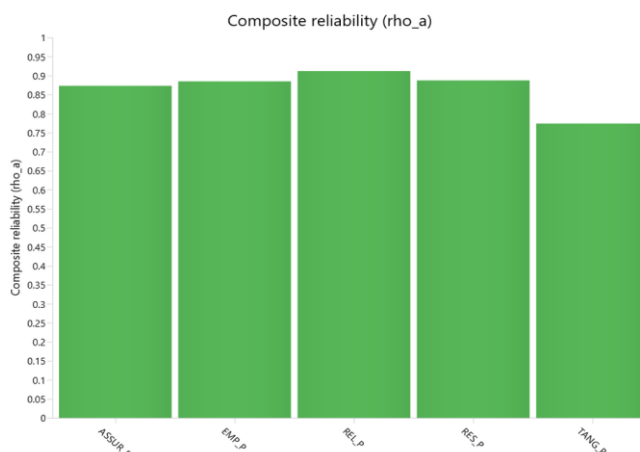


Figure 4.3. Composite Reliability Results

Cronbach's Alpha values for all SERVQUAL dimensions exceeded the recommended threshold of 0.70, indicating satisfactory internal consistency. Composite Reliability values also fell within the recommended range (0.70–0.90), confirming construct reliability.

Table 4.1. Outer Loadings

|                  | Outer loadings |
|------------------|----------------|
| A1.P -> SERVQUAL | 0.760          |
| A1.P <- ASSUR_P  | 0.846          |
| A2.P -> SERVQUAL | 0.511          |
| A2.P <- ASSUR_P  | 0.692          |
| A3.P -> SERVQUAL | 0.810          |
| A3.P <- ASSUR_P  | 0.901          |
| A4.P -> SERVQUAL | 0.817          |
| A4.P <- ASSUR_P  | 0.864          |
| E1.P -> SERVQUAL | 0.718          |
| E1.P <- EMP_P    | 0.802          |
| E2.P -> SERVQUAL | 0.799          |
| E2.P <- EMP_P    | 0.837          |
| E3.P -> SERVQUAL | 0.623          |
| E3.P <- EMP_P    | 0.749          |
| E4.P -> SERVQUAL | 0.816          |
| E4.P <- EMP_P    | 0.888          |
| E5.P -> SERVQUAL | 0.803          |
| E5.P <- EMP_P    | 0.819          |
| R1.P -> SERVQUAL | 0.748          |
| R1.P <- RES_P    | 0.835          |
| R2.P -> SERVQUAL | 0.853          |
| R2.P <- RES_P    | 0.896          |
| R3.P -> SERVQUAL | 0.812          |
| R3.P <- RES_P    | 0.863          |

|                   |       |
|-------------------|-------|
| R4.P -> SERVQUAL  | 0.832 |
| R4.P <- RES_P     | 0.854 |
| RL1.P -> SERVQUAL | 0.655 |
| RL1.P <- REL_P    | 0.727 |
| RL2.P -> SERVQUAL | 0.813 |
| RL2.P <- REL_P    | 0.881 |
| RL3.P -> SERVQUAL | 0.882 |
| RL3.P <- REL_P    | 0.899 |
| RL4.P -> SERVQUAL | 0.841 |
| RL4.P <- REL_P    | 0.904 |
| RL5.P -> SERVQUAL | 0.765 |
| RL5.P <- REL_P    | 0.826 |
| T1.P -> SERVQUAL  | 0.629 |
| T1.P <- TANG_P    | 0.828 |
| T2.P -> SERVQUAL  | 0.537 |
| T2.P <- TANG_P    | 0.862 |
| T3.P -> SERVQUAL  | 0.557 |
| T3.P <- TANG_P    | 0.611 |
| T4.P -> SERVQUAL  | 0.655 |
| T4.P <- TANG_P    | 0.773 |

All indicator loadings exceeded the minimum acceptable threshold (>0.40), while most exceeded the preferred value of 0.708. Indicators with loadings between 0.40 and 0.708 were retained because all constructs demonstrated satisfactory reliability.

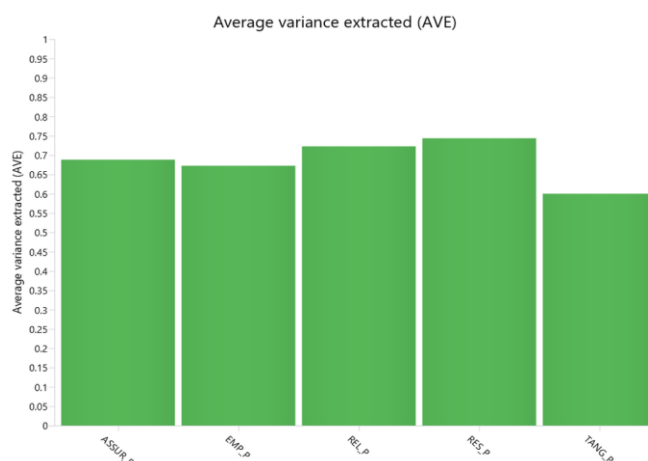


Figure 4.4. Average Variance Extracted (AVE) Results

AVE values for all constructs exceeded 0.50, indicating adequate convergent validity.

Table 4.2. HTMT Results

|                   | Heterotrait-monotrait ratio (HTMT) |
|-------------------|------------------------------------|
| EMP_P <-> ASSUR_P | 0.891                              |
| REL_P <-> ASSUR_P | 0.884                              |
| REL_P <-> EMP_P   | 0.891                              |

|                    |       |
|--------------------|-------|
| RES P <-> ASSUR P  | 0.924 |
| RES P <-> EMP P    | 0.943 |
| RES P <-> REL P    | 1.010 |
| TANG P <-> ASSUR P | 0.692 |
| TANG P <-> EMP P   | 0.802 |
| TANG P <-> REL P   | 0.776 |
| TANG P <-> RES P   | 0.767 |

Several HTMT values exceeded the recommended threshold (<0.90), suggesting overlap among certain SERVQUAL dimensions. However, because the questionnaire was adapted from the original SERVQUAL instrument (Parasuraman et al., 1988) and SERVQUAL remains widely applied as a diagnostic framework, discriminant validity was further evaluated using the Fornell-Larcker criterion.

Table 4.3. Fornell-Larcker Criterion

|                 | ASSU-RANCE   | EMPA-THY     | RELIA-BILITY | RES-PON-SIVE-NESS | TANG-IBLE    |
|-----------------|--------------|--------------|--------------|-------------------|--------------|
| ASSURANCE       | <b>0.830</b> |              |              |                   |              |
| EMPATHY         | 0.792        | <b>0.820</b> |              |                   |              |
| RELIABILITY     | 0.796        | 0.803        | <b>0.850</b> |                   |              |
| RESPONSIVE-NESS | 0.819        | 0.811        | 0.807        | <b>0.862</b>      |              |
| TANGIBLE        | 0.569        | 0.664        | 0.651        | 0.640             | <b>0.775</b> |

All constructs satisfied the Fornell-Larcker criterion, supporting acceptable discriminant validity.

#### 4.1.2 SERVQUAL Gap Analysis

SERVQUAL gap scores were analyzed using paired-sample t-tests to compare customer expectations and perceptions.

Table 4.4. Paired-Sample t-test Results

| Paired Samples T-Test |               |                    |                |                 |                                           |       |        |     |                 |                      |                   |
|-----------------------|---------------|--------------------|----------------|-----------------|-------------------------------------------|-------|--------|-----|-----------------|----------------------|-------------------|
|                       |               | Paired Differences |                |                 |                                           |       | t      | df  | Sig. (2-tailed) | p-value Significance | Mean Significance |
|                       |               | Mean               | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference |       |        |     |                 |                      |                   |
|                       |               |                    |                |                 | Lower                                     | Upper |        |     |                 |                      |                   |
| Pair 1                | T1.P - T1.E   | -.048              | 1.072          | .096            | -.237                                     | .141  | -.499  | 125 | .619            | not valid            | valid             |
| Pair 2                | T2.P - T2.E   | .206               | 1.393          | .124            | -.039                                     | .452  | 1.663  | 125 | .099            | not valid            | not valid         |
| Pair 3                | T3.P - T3.E   | .627               | 1.263          | .113            | .404                                      | .850  | 5.571  | 125 | .000            | valid                | not valid         |
| Pair 4                | T4.P - T4.E   | .127               | 1.233          | .110            | -.090                                     | .344  | 1.156  | 125 | .250            | not valid            | not valid         |
| Pair 5                | RL1.P - RL1.E | -.127              | .929           | .083            | -.291                                     | .037  | -1.534 | 125 | .128            | not valid            | valid             |
| Pair 6                | RL2.P - RL2.E | -.183              | .774           | .069            | -.319                                     | -.046 | -2.649 | 125 | .009            | valid                | valid             |

|         |               |       |       |      |       |       |         |     |      |           |           |
|---------|---------------|-------|-------|------|-------|-------|---------|-----|------|-----------|-----------|
| Pair 7  | RL3.P - RL3.E | -.246 | .689  | .061 | -.368 | -.125 | - 4.007 | 125 | .000 | valid     | valid     |
| Pair 8  | RL4.P - RL4.E | -.270 | .709  | .063 | -.395 | -.145 | - 4.272 | 125 | .000 | valid     | valid     |
| Pair 9  | RL5.P - RL5.E | -.071 | .831  | .074 | -.218 | .075  | -.965   | 125 | .337 | not valid | valid     |
| Pair 10 | R1.P - R1.E   | -.032 | .848  | .076 | -.181 | .118  | -.420   | 125 | .675 | not valid | valid     |
| Pair 11 | R2.P - R2.E   | -.063 | .970  | .086 | -.234 | .107  | -.735   | 125 | .464 | not valid | valid     |
| Pair 12 | R3.P - R3.E   | -.048 | .866  | .077 | -.200 | .105  | -.617   | 125 | .538 | not valid | valid     |
| Pair 13 | R4.P - R4.E   | .349  | 1.298 | .116 | .120  | .578  | 3.020   | 125 | .003 | valid     | not valid |
| Pair 14 | A1.P - A1.E   | -.079 | .826  | .074 | -.225 | .066  | - 1.079 | 125 | .283 | not valid | valid     |
| Pair 15 | A2.P - A2.E   | -.063 | .746  | .066 | -.195 | .068  | -.956   | 125 | .341 | not valid | valid     |
| Pair 16 | A3.P - A3.E   | -.040 | .898  | .080 | -.198 | .119  | -.496   | 125 | .621 | not valid | valid     |
| Pair 17 | A4.P - A4.E   | -.198 | .780  | .069 | -.336 | -.061 | - 2.856 | 125 | .005 | valid     | valid     |
| Pair 18 | E1.P - E1.E   | -.056 | .823  | .073 | -.201 | .090  | -.758   | 125 | .450 | not valid | valid     |
| Pair 19 | E2.P - E2.E   | .095  | 1.007 | .090 | -.082 | .273  | 1.061   | 125 | .291 | not valid | not valid |
| Pair 20 | E3.P - E3.E   | .103  | .937  | .083 | -.062 | .268  | 1.236   | 125 | .219 | not valid | not valid |
| Pair 21 | E4.P - E4.E   | .008  | .908  | .081 | -.152 | .168  | .098    | 125 | .922 | not valid | not valid |
| Pair 22 | E5.P - E5.E   | .016  | .858  | .076 | -.135 | .167  | .208    | 125 | .836 | not valid | not valid |

Four service attributes showed statistically significant negative gaps ( $p < 0.05$ ), comprising three items within the Reliability dimension and one within Assurance. The Reliability dimension therefore represents the largest service quality deficiency at QC Pet Care and was identified as the primary improvement priority.

#### 4.1.3 Staff Questionnaire

The staff survey evaluated four internal operational dimensions: Alignment, Communication, Role Clarity, and SOP System.

Table 4.5. Staff Questionnaire Results

| Dimension     | Meaning                        | Mean | Implied Rank |
|---------------|--------------------------------|------|--------------|
| Alignment     | Vision, goals, involvement     | 4.39 | Moderate     |
| Communication | Clarity & coordination         | 4.43 | Moderate     |
| Role Clarity  | Understanding responsibilities | 4.71 | Strongest    |
| SOP System    | Standardization & execution    | 4.06 | Weakest      |

Among the four dimensions, SOP System obtained the lowest mean score (4.06), indicating that staff perceived standardization and operational procedures as the weakest aspect of internal service delivery. Role Clarity received the highest score (4.71), suggesting that employees generally understood their responsibilities despite the lack of standardized procedures.

#### 4.2 Qualitative Analysis

##### 4.2.1 Customer Interviews

Customer interviews identified several recurring themes related to service quality.

Table 4.6. Customer Interview Themes

| Theme                 | Description                             | Impact on Reliability |
|-----------------------|-----------------------------------------|-----------------------|
| Outcome inconsistency | Pets do not always recover as expected  | Strong                |
| Expectation mismatch  | Customers expect guaranteed recovery    | Strong                |
| Price concerns        | Cost affects decisions and satisfaction | Moderate              |
| Conditional trust     | Trust exists but depends on results     | Moderate              |
| Reactive behavior     | Customers come only when problems occur | Low                   |

Expectation mismatch and perceived outcome inconsistency emerged as the dominant themes affecting the Reliability dimension. Customers frequently evaluated service quality based on treatment outcomes rather than process consistency, which is common in healthcare settings where technical outcomes are inherently uncertain. Other recurring themes included price concerns, conditional trust, and reactive healthcare-seeking behavior.

#### 4.2.2 Staff Interviews

Staff interviews highlighted several operational challenges affecting service consistency.

Table 4.7. Staff Interview Themes

| Theme                  | Evidence                                | Category  | Impact on Reliability |
|------------------------|-----------------------------------------|-----------|-----------------------|
| Pseudo SOP clarity     | "SOP is clear" but learned from seniors | Process   | Strong                |
| Experience dependency  | "Learn from mistakes"                   | People    | Strong                |
| Inconsistent execution | "More-or-less SOP"                      | Execution | Strong                |
| Communication gaps     | Different info to clients               | Internal  | Strong                |
| Human errors           | Pricing mistakes                        | Process   | Moderate              |
| External constraints   | Cost, late cases                        | External  | Strong                |
| Expectation mismatch   | Customers expect full recovery          | External  | Strong                |
| Adaptability required  | Field situations vary                   | Execution | Moderate              |

The findings revealed recurring issues including undocumented SOPs, reliance on experience rather than standardized procedures, inconsistent execution, communication gaps, and pricing-related errors. These findings indicate that service delivery largely depends on individual experience instead of formal operational systems.

Open-ended questionnaire responses further supported these findings.

Table 4.8. Staff Open-ended Response Themes

| Theme                  | Evidence                  | Category | Impact on Reliability |
|------------------------|---------------------------|----------|-----------------------|
| SOP not documented     | "SOP not delivered fully" | Process  | Strong                |
| Theory vs practice gap | "Field ≠ theory"          | Process  | Strong                |

|                        |                        |             |          |
|------------------------|------------------------|-------------|----------|
| Need for adaptation    | "Depends on situation" | Execution   | Strong   |
| Communication reliance | "Need clarification"   | Internal    | Moderate |
| Skill limitation       | "Still learning tasks" | Capability  | Moderate |
| Need for training      | "Need more experience" | Development | Moderate |

Recurring themes included insufficient SOP documentation, discrepancies between written procedures and field implementation, the need for greater adaptability, and additional staff training. Collectively, these findings reinforce the importance of establishing standardized operational procedures.

#### 4.3 Data Triangulation

Table 4.9. Triangulation of Quantitative and Qualitative Findings

| Data Source                     | Main Finding                                | Context in Business                         |
|---------------------------------|---------------------------------------------|---------------------------------------------|
| Customer SERVQUAL Questionnaire | Reliability is the most significant problem | Business is perceived as unreliable         |
| Customer Interviews             | Service feels inconsistent                  | Confirming that reliability problem is real |
| Staff Questionnaire             | SOP: weakest (lowest point)                 | Internal system issue                       |
| Open-ended Responses            | SOP not practical                           | Execution gap                               |
| Staff Interviews                | Experience-dependent work                   | No standardization                          |

Triangulation demonstrated strong consistency across all data sources. Customer SERVQUAL analysis identified Reliability as the largest service quality gap, customer interviews confirmed inconsistent service experiences, the staff survey identified the SOP System as the weakest internal dimension, and staff interviews consistently pointed to the absence of standardized procedures. Together, these findings indicate that inconsistent service delivery originates primarily from inadequate operational standardization, providing the empirical basis for the proposed improvement framework.

## V. CONCLUSIONS

Based on the quantitative and qualitative findings, this study proposes an integrated service improvement framework to address the operational issues underlying QC Pet Care's service quality gaps. The triangulation results consistently identified **Reliability** as the primary service quality deficiency, while the staff survey and interviews indicated that the absence of standardized operating procedures (SOPs) was the main internal cause of inconsistent service delivery.

Accordingly, a **service blueprint** was first developed to map the complete service process and identify customer touchpoints, frontline activities, backstage operations, and supporting processes. The blueprint served as the basis for redesigning the clinic's operational workflow and developing standardized procedures.

Four Standard Operating Procedures (SOPs) were subsequently proposed to improve service consistency:

- **Patient Consultation Process**, to standardize customer interactions from consultation to service completion;
- **Communication and Training**, to establish consistent communication practices and onboarding procedures for new staff;
- **Service Consistency Control**, to monitor SOP compliance and maintain consistent service delivery across employees; and

- **Exception Handling Procedure**, to provide clear guidelines for managing complaints, payment disputes, service delays, and other non-routine situations.

To support daily implementation, a **Daily Control Sheet** was introduced as an operational monitoring tool. The control sheet records daily transactions, payment discrepancies, SOP compliance, exceptional cases, and managerial verification, thereby improving communication between frontline staff and management while facilitating continuous operational monitoring.

Continuous improvement is proposed through the **Plan-Do-Check-Act (PDCA)** cycle, which enables gradual implementation, evaluation, and refinement of the proposed operational changes. Given QC Pet Care's limited organizational resources, the PDCA approach provides a practical mechanism for implementing improvements incrementally while minimizing operational disruption.

The effectiveness of the proposed framework can be evaluated using SERVQUAL-based operational indicators covering responsiveness, reliability, assurance, empathy, and tangibles.

**Table 4.10. SERVQUAL-based Performance Indicators for Evaluating Implementation**

| <i>SERVQUAL Dimension</i> | <i>Proxy Metric</i>                                        | <i>Before</i>                                                                                                                                          | <i>After (Expected Outcome)</i>                                                                              |
|---------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <i>Responsiveness</i>     | <i>WhatsApp response time, pet owner waiting room time</i> | <i>&gt; 5 mins</i>                                                                                                                                     | <i>0 - 5 mins</i>                                                                                            |
| <i>Reliability</i>        | <i>SOP compliance rate, service errors</i>                 | <i>Staff keep asking what to do whenever conflicts / exceptions arises, received 1-star rating in September 2025 due to unclear exception handling</i> | <i>Staff no longer asks what to do, received no more bad ratings</i>                                         |
| <i>Assurance</i>          | <i>Staff adherence to protocol</i>                         | <i>Staff uses tacit knowledge to fill in "blanks"</i>                                                                                                  | <i>Staff has explicit steps to go through</i>                                                                |
| <i>Empathy</i>            | <i>Consultation duration, follow-up rate</i>               | <i>Consultation duration was fine but follow-up rate was low</i>                                                                                       | <i>Increased follow-up rate due to new follow-up SOP via WhatsApp</i>                                        |
| <i>Tangibles</i>          | <i>Cleanliness checklist score</i>                         | <i>No checklist before</i>                                                                                                                             | <i>New cleanliness checklist due to new SOP, that helps staff not to forget to do smaller cleaning tasks</i> |

Overall, the proposed framework integrates process redesign, operational standardization, routine monitoring, and continuous evaluation to improve service consistency and customer satisfaction while supporting long-term business performance.

An acknowledgement section may be presented after the conclusion, if desired.

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