



## Investigating the Role of SERVQUAL Dimensions in Shaping Customer Satisfaction and Loyalty: Evidence from Rainbow Gym, Semarang

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### ABSTRACT

**Purpose:** This study examines how SERVQUAL dimensions influence customer satisfaction and loyalty at Rainbow Gym, Semarang. With rising competition in Indonesia's fitness industry, understanding key service quality drivers is critical for business sustainability and theory development. **Methodology:** Using quantitative methods, data were collected from 140 gym members via structured questionnaires. Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4 analyzed the relationships between SERVQUAL dimensions (tangible, reliability, responsiveness, assurance, empathy), satisfaction, and loyalty. **Results:** All SERVQUAL dimensions significantly impacted satisfaction, with assurance ( $\beta=0.368$ ) and empathy ( $\beta=0.264$ ) showing the strongest effects. Satisfaction strongly predicted loyalty ( $\beta=0.835$ ). The model explained 71.4% of satisfaction variance and 69.7% of loyalty variance. **Findings:** Interpersonal service quality (assurance, empathy) outweighs tangible factors in driving satisfaction—a notable contrast to Western gym studies emphasizing facilities. **Novelty:** This research pioneers SERVQUAL application in Indonesia's weight-training gym context, diverging from prior focus on healthcare/banking sectors. **Originality:** The study challenges assumptions about physical facilities' dominance in service quality, highlighting cultural nuances in fitness service expectations. **Conclusion:** Gyms should prioritize staff training in interpersonal skills over facility upgrades to boost loyalty. Future research could explore pricing and personalization as moderators. **Type of Paper:** Quantitative research article.

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## INTRODUCTION

In recent years, public awareness regarding the importance of health has continued to rise, driven by the increasing demand for a healthy lifestyle and disease prevention. One of the most popular methods chosen is regular exercise, with gyms becoming a favored option due to their comprehensive facilities and flexible workout programs industry, which reached a revenue of USD 0.3 billion in 2023, with an annual growth rate of 4.8% since 2018 (Nadzira, 2025). Gyms not only help improve physical endurance but also provide psychological benefits, such as stress reduction and enhanced self-confidence (Powell et al., 2019).

Service quality plays a vital role in shaping customer loyalty across sectors such as banking, retail, and healthcare (Makanyeza & Chikazhe, 2017; Sevilmış et al., 2024). In the fitness industry, dimensions like empathy and responsiveness have been linked to member retention (García-Fernández et al., 2018). Despite its global relevance, research on service quality in recreational health services especially gyms in emerging markets like Indonesia remains scarce. As wellness trends rise globally, understanding these dynamics in local contexts becomes increasingly important (Huang & Kim, 2023).

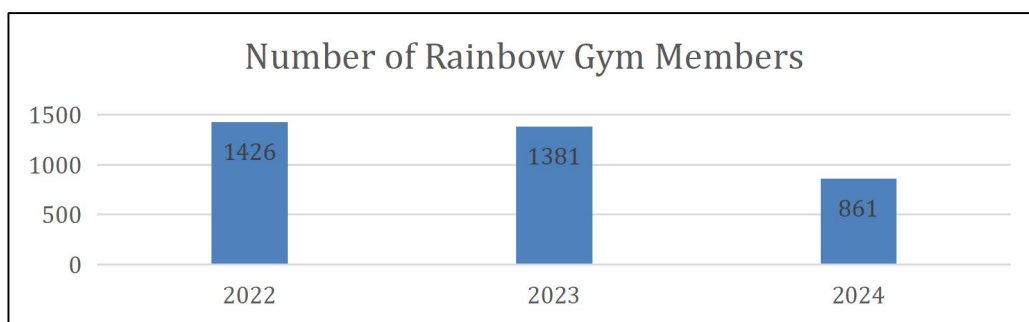
This study is grounded in three theoretical foundations. First, the SERVQUAL model developed by Parasuraman et al. (1988) identifies five dimensions of service quality (tangibles, reliability, responsiveness, assurance, and empathy) which form the core measurement framework in this study. Second, the Expectancy-Disconfirmation Model (EDM) (Oliver, 1980) explains satisfaction as the result of a comparison between customer expectations and perceived service performance. Third, Relationship Marketing theory (Morgan & Hunt, 1994) underscores the importance of long-term relational bonds, trust, and commitment in fostering loyalty. By combining these theories, this study presents a robust conceptual lens to evaluate how service quality leads to satisfaction and loyalty, particularly in gym services.

In the competitive fitness market in Semarang, service quality has become a crucial differentiating factor among gyms. For example, FitNation Gym, located in the Gajahmungkur district, attracts numerous customers with a wide range of popular exercise classes (Saputra, 2018), while Fithub Gym appeals to upper-middle-class consumers by offering premium facilities and nationwide branches (Putri, 2021). These examples indicate that innovation and service quality are key differentiators in a highly competitive market like Semarang.

Globally, SERVQUAL has been applied extensively in healthcare and banking (Sevilmış et al., 2024), but its application in gyms particularly in Indonesia remains sparse. This study fills this gap by examining how SERVQUAL dimensions uniquely operate in a weight-training gym context, where interpersonal interactions (e.g., trainer competence, empathy) may outweigh tangible factors. Furthermore, while prior studies focus on Western contexts (García-Fernández et al., 2018), this research provides insights into an emerging market where affordability and cultural preferences shape consumer behavior.

Rainbow Gym is one of the fitness centers in Semarang City that focuses on weight training. Strategically located in the Tembalang district, specifically in the Sendangmulyo sub-district, Rainbow Gym opened in January 2022. It offers a comprehensive range of facilities, including modern weightlifting equipment, a supportive community atmosphere, and affordable membership fees. These strengths have made Rainbow Gym a top choice for weightlifting enthusiasts. Since its establishment, Rainbow Gym has experienced membership fluctuations over the years, as illustrated in the graph below:

Figure 1. Number of Rainbow Gym Members (2022-2024)



Based on internal membership records, the data show a significant decline in the number of Rainbow Gym members from 2022 to 2024. In 2022, the gym recorded 1,426 members, which decreased by 3.16% to 1,381 in 2023, and then dropped sharply by 37.65% to 861 in 2024. This

decline is largely attributed to the lifetime membership system, where individuals can register only once without the option to renew after cancellation. As a result, the influx of new members is limited, while inactive former members contribute to the overall decline in total membership. This situation highlights the importance of implementing effective customer retention strategies to maintain membership numbers amidst intense competition.

In addition to internal data, customer reviews on the Google Review platform provide valuable insights into public perceptions of Rainbow Gym's service. Out of 67 reviews, the gym received an average rating of 4.7 stars. Most customers praised the gym's well-equipped facilities, affordable pricing, and friendly staff, reflecting strengths in the dimensions of tangibles and assurance. However, several complaints were raised regarding unfriendly staff behavior, indicating the need for improvement in the areas of empathy and responsiveness. These reviews support the urgency of studying service quality and its impact on customer satisfaction and loyalty at Rainbow Gym.

Competition in Semarang's fitness industry is intense, with Arnoz Gym and 2008 Gym Fitness emerging as Rainbow Gym's main rivals. Arnoz Gym offers a wider variety of services and more diverse equipment, while 2008 Gym Fitness—being newly established—has the advantage of modern and unused facilities. Besides service and facility factors, both competitors offer membership prices similar to Rainbow Gym and are located nearby, providing customers with convenient access. This competitive landscape urges Rainbow Gym to continuously innovate and improve service quality to meet customer needs and remain competitive in the local market.

**Table 1. Summary of Rainbow Gym Customer Pre-Survey Results (n=25)**

Dimensions	Problematic Indicator	% Don't Agree
Tangible	The gym room feels uncomfortable	16%
Responsiveness	Emergency and cleaning services are not ready/responsive	16%
Responsiveness	Schedule change information is unclear	16%
Loyalty	Not sure about sticking with subscription if there is an alternative	12-16%

Source: Pre-survey research data (2025).

The preliminary survey shows that Rainbow Gym customers are generally satisfied with the services provided, especially in the dimensions of reliability and assurance. However, 16% dissatisfaction was recorded on several indicators, particularly in the aspects of room comfort, emergency service readiness, cleanliness of workout areas, and clarity of schedule information. In addition, customer loyalty has not yet been fully established. These findings highlight the need for evaluation of the tangible and responsiveness dimensions as a foundation for improving service and customer retention.

This research provides an empirical overview of service quality at Rainbow Gym in relation to customer satisfaction and loyalty. By understanding the aspects of service most valued by customers, management can enhance service quality, such as staff responsiveness, facility safety, and equipment comfort, in order to maintain competitiveness in the fitness industry.

The general aim of this research is to analyze the influence of service quality on customer satisfaction and loyalty at Rainbow Gym. Moreover, the study aims to identify the service quality dimensions that have the most significant impact on satisfaction and loyalty. It is expected that the findings of this research will generate strategic, data-driven recommendations for gym managers to improve customer satisfaction and retention.

This study offers several contributions. First, customer satisfaction is examined as an intervening variable between service quality dimensions and customer loyalty, especially in the under-researched gym industry. Second, it analyzes customer satisfaction based on the five

SERVQUAL dimensions (tangible, reliability, responsiveness, assurance, and empathy), offering deeper insights into the factors influencing satisfaction. Third, the study employs the SEM-PLS approach, which is still rarely applied in gym-related research. Fourth, the results can serve as a practical reference for gym management in designing more effective service, marketing, and retention strategies.

### **Customer Loyalty**

Customer loyalty refers to the willingness of consumers to continue using certain products or services repeatedly over time, based on satisfaction, trust, and the perceived value of the relationship with the service provider (Gultom et al., 2024). Loyal customers tend to remain despite alternative options and demonstrate positive behaviors such as recommending the service to others (García-Fernández et al., 2018). According to Meng et al. (2025), indicators of customer loyalty include: (1) regular visits, (2) word-of-mouth promotion, (3) resistance to switching to competitors.

### **Customer Satisfaction**

Customer satisfaction is defined as the perception of customers regarding their experience after using a service, determined by the comparison between expectations and reality (Wilasari et al., 2023). According to Ardani & Rijali (2024) indicators of satisfaction include: (1) expectation alignment, (2) intention to revisit, (3) willingness to recommend.

### **Service Quality (SERVQUAL)**

Service quality in the modern gym industry is measured using the SERVQUAL model (Kotler & Keller, 2016), which includes five dimensions: (1) tangible (physical facilities), (2) reliability (consistency of service), (3) responsiveness (staff's response speed), (4) assurance (staff's competence in operating digital tools and protecting member data), and (5) empathy (understanding customer needs). Recent research by Sevilmiş et al. (2024) shows that when traditional services are combined with digital innovations and meet customer expectations, satisfaction levels significantly increase. Therefore, service quality evaluation based on SERVQUAL is highly relevant for understanding and improving customer experience in the increasingly competitive fitness industry.

### **Tangible**

The tangible aspect of gym service quality includes physical facility conditions such as cleanliness of equipment, workout room comfort, and availability of tools. Recent studies show that room aesthetics (lighting, layout) significantly contribute to customer experience (Sevilmiş et al., 2024). According to Mahesa & Sulistyarto (2022), indicators include: (1) comfortable waiting room, (2) well-groomed receptionist, (3) clean and tidy trainer appearance, (4) variety of fitness equipment, (5) comfortable workout space, (6) adequate parking space.

### **Reliability**

Reliability refers to a company's ability to deliver services accurately, appropriately, and as promised (Septianan & Alie, 2023). In the gym context, reliability builds customer trust and enhances satisfaction. Gyms that consistently offer high-quality services, accurate program information, and reliable schedules are deemed more dependable. According to Septianan & Alie (2023), indicators include: (1) customer service provision, (2) dependable problem resolution, (3) accurate first-time service, (4) timely delivery, (5) error-free record keeping.

### **Responsiveness**

Responsiveness reflects the speed and willingness of service providers to respond to customer needs, requests, and complaints (Halim et al., 2021). This includes the ability of staff to provide clear information about service timing and follow through quickly and accurately (Septianan & Alie, 2023). Research by Salsabila et al. (2023) indicates that responsiveness significantly contributes to gym customer satisfaction. According to Septianan & Alie (2023), indicators include: (1) informing customers about service time certainty, (2) quick customer service, (3) staff availability, (4) responsiveness to customer requests.

### **Assurance**

Assurance is a service quality dimension that reflects the ability of service providers to build customer trust through staff knowledge, professionalism, and courtesy (Rizkillah et al., 2020). In

Huang & Kim (2023) study, assurance was the most influential factor in gym customer satisfaction, emphasizing the importance of trust and a sense of safety (Bernik, 2019). According to Septianan & Alie (2023), Indicators include: (1) trustworthy staff, (2) comfort during transactions, (3) polite behavior, (4) ability to answer customer questions.

### **Empathy**

Empathy reflects care and personal attention from service providers toward customers, including communication between both parties. According to Huang & Kim (2023), this dimension is evident in staff consideration for customer conditions, interest in individual needs, and flexibility such as schedule adjustments. According to Septianan & Alie, (2023), Indicators include: (1) understanding customer issues, (2) acting in the customer's best interest, (3) providing personal attention, (4) convenient operating hours.

### **Influence of Tangible on Customer Satisfaction**

The tangible dimension includes physical facilities such as cleanliness, equipment comfort, and spatial layout, which influence customer perceptions (Huang & Kim, 2023). The Modern Physical Evidence Theory emphasizes the importance of well-maintained physical elements as service quality standards (Wirtz & Lovelock, 2022). In the context of gyms, functional and aesthetic environments enhance customer experience and satisfaction (Sevilmiş et al., 2024). Research shows that tangible dimensions have a positive and significant effect on customer satisfaction in various gyms. At Osbond Gym Palembang and Dewa Ruci Gym, tangibles contribute to increasing customer satisfaction (Robustin, 2016; Septianan & Alie, 2023). At Melia Gym Bantul, the customer satisfaction level reaches 80% in the "very satisfied" category (Ramadhani & Arjuna, 2023). Meanwhile, at the HSC UNY Fitness Center, tangibles also have a significant effect on customer satisfaction (Salsabila et al., 2023).

Hypothesis 1: The tangible variable has a positive and significant effect on customer satisfaction.

### **Influence of Reliability on Customer Satisfaction**

Reliability is the ability of service providers to consistently deliver services as promised, building customer trust as the foundation of satisfaction (Huang & Kim, 2023; Wirtz & Lovelock, 2022; Zeithaml et al., 2017). In fitness centers, reliability includes accurate schedules, program information, and training quality consistency (Sevilmiş et al., 2024). Previous research from Osbond Gym Palembang, reliability partially has a positive effect on customer satisfaction (Septianan & Alie, 2023). Research at Dewa Ruci Gym also found a positive and significant effect (Robustin, 2016). Meanwhile, at Melia Gym Bantul, the satisfaction level reached 56% and was categorized as "very satisfied" (Ramadhani & Arjuna, 2023). At the HSC UNY Fitness Center, reliability was proven to have a significant effect on customer satisfaction (Salsabila et al., 2023).

Hypothesis 2: The reliability variable has a positive and significant effect on customer satisfaction.

### **Influence of Responsiveness on Customer Satisfaction**

Responsiveness refers to the staff's ability and readiness to respond to customer needs quickly and politely, forming positive perceptions and increasing satisfaction (Huang & Kim, 2023). Previous studies have shown that responsiveness has a positive effect on customer satisfaction at Osbond Gym Palembang, and Dewa Ruci Gym (Robustin, 2016; Septianan & Alie, 2023). At Melia Gym Bantul, responsiveness provides a satisfaction level of 56% which is categorized as "very satisfied" (Ramadhani & Arjuna, 2023), while at the Fitness Center HSC UNY, responsiveness has a significant effect on customer satisfaction (Salsabila et al., 2023).

Hypothesis 3: The responsiveness variable has a positive and significant effect on customer satisfaction.

### **Influence of Assurance on Customer Satisfaction**

Assurance includes staff competence, credibility, and courteous behavior that provide customers with a sense of security and trust, thereby increasing satisfaction, especially in interactive services like gyms (Wirtz & Lovelock, 2022). Research at Osbond Gym Palembang and Dewa Ruci Gym shows the positive influence of assurance on satisfaction (Robustin, 2016; Septianan & Alie, 2023). In Melia Gym Bantul, assurance contributed to 50% of customers feeling very satisfied

(Ramadhani & Arjuna, 2023), while at HSC UNY Fitness Center, it accounted for 15.63% (Salsabila et al., 2023).

Hypothesis 4: The assurance variable has a positive and significant effect on customer satisfaction.

### Influence of Empathy on Customer Satisfaction

Empathy reflects staff care and attention to customer needs and comfort, enhancing service satisfaction through understanding individual conditions and flexibility (Huang & Kim, 2023). Empathy has a significant effect on customer satisfaction in various gyms. At Dewa Ruci Gym, this aspect plays an important role in increasing customer satisfaction (Robustin, 2016). At Osbond Gym Palembang, empathy contributes individually and together with other dimensions (Septianan & Alie, 2023). At Melia Gym Bantul, the satisfaction level reached 70% in the "very satisfied" category (Ramadhani & Arjuna, 2023). Meanwhile, at Galby Gym, although its contribution is lower, empathy remains an important element in service (Syarifuddin & Sari, 2015).

Hypothesis 5: The empathy variable has a positive and significant effect on customer satisfaction.

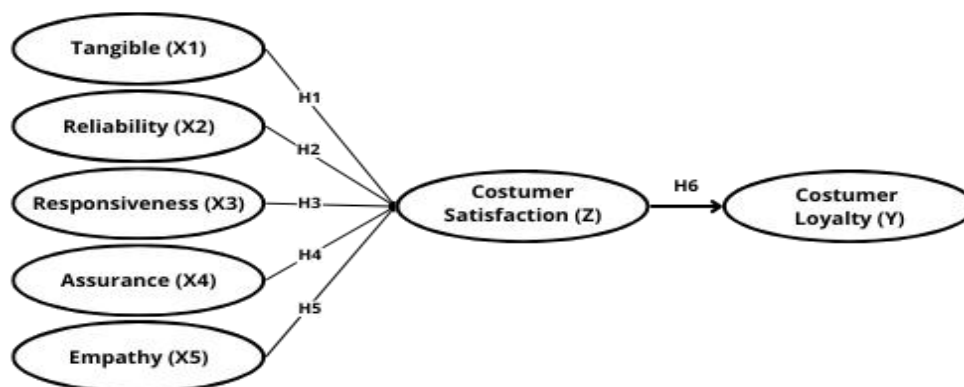
### Influence of Customer Satisfaction on Customer Loyalty

Customer satisfaction plays a crucial role in building loyalty, where satisfied customers tend to continue using services and recommend them to others (Hindarwati et al., 2023; Purba & Siswono, 2023). Previous research customer satisfaction has a significant influence on customer loyalty at Vizta Gym Medan (Purba & Siswono, 2023). At Galby Gym, the customer satisfaction variable has a significant influence on customer loyalty (Syarifuddin & Sari, 2015), while at Fitness Center customer satisfaction has a significant influence (Hindarwati et al., 2023).

Hypothesis 6: Customer satisfaction has a positive and significant effect on customer loyalty in fitness centers.

## Research Framework

Figure 2. Research Framework



## METHOD

This study examines independent variables (tangible, reliability, responsiveness, assurance, and empathy), an intervening variable (customer satisfaction), and a dependent variable (customer loyalty). All constructs are modeled as reflective constructs, where indicators reflect the latent variables (Hair et al., 2021). The population consists of Rainbow Gym members in Semarang City. Since studying the entire population is impractical, a sample is used. The sample size was determined using the guideline of 5 to 10 times the number of indicators in the model. Due to limited availability of respondents and time constraints, the minimum recommendation of 5 times the number of indicators was chosen to balance data adequacy and feasibility.

$$n = \{5 \text{ to } 10 \times \text{number of indicators}\}$$

$$n = 5 \times 28$$

$$n = 140$$

Thus, 140 respondents were purposively selected in February 2025. Purposive sampling was chosen to ensure respondents meet specific criteria aged 18 or older, active members holding gym membership cards to guarantee relevant and accurate data (Sugiyono, 2018).

Data collection employed structured questionnaires based on validated indicators from previous research, using a five-point Likert scale ranging from Strongly Disagree to Strongly Agree. A pre-test was conducted with 25 respondents to assess the questionnaire's clarity, relevance, and reliability. Based on the pre-test results, minor improvements were made. Instrument reliability was confirmed by Cronbach's Alpha values above 0.7 for all constructs, indicating good internal consistency (Hair et al., 2021).

Data were analyzed using Structural Equation Modeling with Partial Least Squares (PLS-SEM) in SmartPLS 4. The use of PLS-SEM rather than Covariance-Based SEM (CB-SEM) is justified by the exploratory nature of this study, the relatively small sample size, and the lack of requirement for multivariate normality (Hair et al., 2021). The analysis involved assessment of the outer model (validity and reliability tests) and the inner model (R-square, effect size f-square, path coefficients, and model fit) to verify construct measurement accuracy and structural relationships.

## RESULTS AND DISCUSSION

### RESULTS

#### Respondent Description

The following table displays the characteristics of respondents based on gender, age, occupation, income, and frequency of exercise per week, providing a demographic overview of the research participants.

**Tabel 2. Hasil Responden Penelitian**

Karakteristik	Deskripsi	Frekuensi	Presentase
Jenis Kelamin	Laki-laki	96	68,57%
	Perempuan	44	31,43%
Age	18-25 years	102	72,86%
	25-35 years	28	20,00%
	>35 years	10	7,14%
Job	Student	72	51,43%
	Private Employee	34	24,29%
	Entrepreneur	10	7,14%
	TNI/POLRI/PNS	9	6,43%
	Other	15	10,71%
Amount of Income	< Rp 500.000	41	29,29%
	Rp 500.000 - Rp 1.500.000	24	17,14%
	Rp 1.500.000 - Rp 2.500.000	23	16,43%
	> Rp 2.500.000	93	66,43%
Frequency in a week	1 time	21	15,00%
	2-3 times	80	57,14%
	4-5 times	32	22,86%
	> 5 times	7	5,00%

Source: Research Survey Data (2025).

This study involved 140 respondents, consisting of 68.57% male and 31.43% female participants, with the majority aged between 18 and 25 years (72.86%). In terms of occupation, most

respondents were students (51.43%), followed by private employees (24.29%). Regarding income, 66.43% of respondents earned more than IDR 2,500,000 per month, while 29.29% earned less than IDR 500,000. In terms of exercise frequency per week, the majority exercised 2–3 times (57.14%), while only 5% exercised more than five times a week. These data indicate that the majority of gym members are young males with student status and tend to engage in regular physical activity.

**Outer Model Test**

The measurement model test (outer model) is used in SEM-PLS analysis to assess the validity and reliability of the research model.

Figure 3. SEM PLS Model

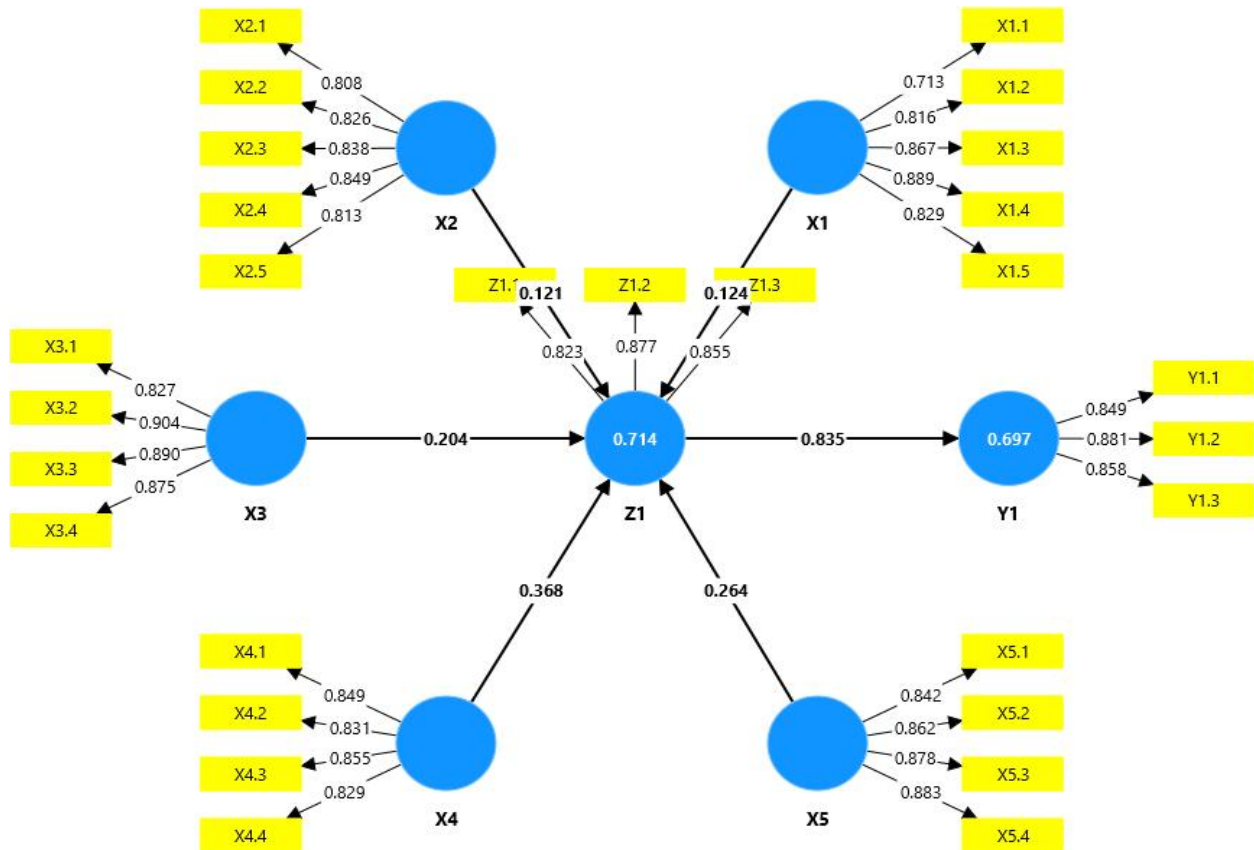


Table 3. Outer model

Variable	Item	Factor Loading	Construct Reliability	Average Variance Extracted
Tangible	X1.1	0.713	0.914	0.681
	X1.2	0.816		
	X1.3	0.867		
	X1.4	0.889		
	X1.5	0.829		
Reliability	X2.1	0.808	0.915	0.684
	X2.2	0.826		
	X2.3	0.838		
	X2.4	0.849		
	X2.5	0.813		
Responsiveness	X3.1	0.827	0.929	0.765
	X3.2	0.904		
	X3.3	0.890		
	X3.4	0.875		

Assurance	X4.1	0.849	0.906	0.707
	X4.2	0.831		
	X4.3	0.855		
	X4.4	0.829		
Empathy	X5.1	0.842	0.923	0.751
	X5.2	0.862		
	X5.3	0.878		
	X5.4	0.883		
Customer Loyalty	Y1.1	0.849	0.897	0.745
	Y1.2	0.881		
	Y1.3	0.858		
Customer Satisfaction	Z1.1	0.823	0.888	0.726
	Z1.2	0.877		
	Z1.3	0.855		

Source: Primary data testing (2025).

All indicators have outer loading values above 0.70, ranging from 0.713 to 0.904, which meets the minimum threshold for convergent validity. In addition, both the composite reliability and Cronbach's Alpha values exceed 0.70, indicating strong construct reliability. The Average Variance Extracted (AVE) values are also above 0.50, demonstrating that more than 50% of the variance in the indicators can be explained by their respective constructs.

#### Multicollinearity Test

The multicollinearity test aims to detect high correlations among independent variables that could disrupt the stability of regression coefficients. This test uses the Variance Inflation Factor (VIF), where a general threshold of  $VIF > 10$  indicates serious multicollinearity.

**Table 4. Multikoleniarity**

	VIF
X1 -> Z1	1.423
X2 -> Z1	1.856
X3 -> Z1	1.877
X4 -> Z1	1.765
X5 -> Z1	1.666
Z1 -> Y1	1.000

Source: Primary data testing (2025).

Based on the results, all variables (X1-X5 to Z1) have VIF values below 2, and the VIF for Z1 to Y1 is 1.000, indicating no multicollinearity issues.

#### R-Square Test

The R-square test measures the extent to which independent variables influence the dependent variable. The model is considered strong if  $r^2 > 0.75$ , moderate if  $r^2$  is around 0.50, and weak if  $r^2 < 0.25$ .

**Table 5. R-square**

	R-square	R-square adjusted
Y1	0.697	0.695
Z1	0.714	0.703

Source: Primary data testing (2025).

As shown in Table 5, the  $R^2$  for Z1 is 0.714 and for Y1 is 0.697, indicating a strong predictive model ( $>0.50$ ). This suggests that the independent variables explain the variation in the dependent variables well. The adjusted R-square values close to  $R^2$  indicate a stable model.

### F-Square Test

The f-square ( $f^2$ ) test assesses the effect of latent independent variables on latent dependent variables. An effect is considered small if  $f^2 < 0.02$ , medium if  $f^2 > 0.15$ , and large if  $f^2 > 0.35$ .

**Table 7. F-square**

Variable	f-square
X1 -> Z1	0.038
X2 -> Z1	0.028
X3 -> Z1	0.077
X4 -> Z1	0.268
X5 -> Z1	0.146
Z1 -> Y1	2.304

Source: Primary data testing (2025).

The effect size ( $f^2$ ) analysis reveals that Assurance has a medium effect on Customer Satisfaction with a value of 0.268. Empathy shows an effect size of 0.146, which is close to the medium category. Meanwhile, Tangible, Reliability, and Responsiveness each have small effects on Customer Satisfaction, with  $f^2$  values of 0.077, 0.038, and 0.028 respectively. Furthermore, Customer Satisfaction has a very large effect on Customer Loyalty, indicated by an  $f^2$  value of 2.304. These results suggest that while most service quality dimensions moderately to slightly influence satisfaction, satisfaction itself strongly drives customer loyalty.

### Model Fit Test

The goodness of fit (GoF) test evaluates the overall fit of the model, both measurement and structural, with the SRMR threshold set below 0.10.

**Table 8. Goodness of Fit**

	Saturated model	Estimated model
SRMR	0.051	0.054
d_ULS	1.062	1.169
d_G	0.944	0.961
Chi-square	646.960	667.380
NFI	0.790	0.783

Source: Primary data testing (2025).

The SRMR results show values of 0.051 for the saturated model and 0.054 for the estimated model, both below the 0.08 threshold, indicating a good model fit.

### Path Coefficients Test

The path coefficients test is used to assess the relationships between variables in the model. A p-value  $< 0.05$  indicates a significant relationship, while a p-value  $> 0.05$  indicates a non-significant relationship.

**Table 9. Path Coefficients**

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
X1 -> Z1	0.124	0.133	0.053	2.345	0.010
X2 -> Z1	0.121	0.117	0.061	1.987	0.023
X3 -> Z1	0.204	0.200	0.075	2.704	0.003
X4 -> Z1	0.368	0.370	0.074	5.010	0.000
X5 -> Z1	0.264	0.261	0.059	4.440	0.000
Z1 -> Y1	0.835	0.836	0.030	27.962	0.000

Source: Primary data testing (2025).

The path coefficient results show that all SERVQUAL dimensions positively influence customer satisfaction (Z1). Assurance (X4) has the greatest influence (0.368,  $p = 0.000$ ), followed by Empathy (X5) (0.264,  $p = 0.000$ ) and Responsiveness (X3) (0.204,  $p = 0.003$ ). Tangible (X1) and Reliability (X2) are also significant, though with smaller effects. Additionally, customer satisfaction (Z1) has a strong impact on customer loyalty (Y1) with a coefficient of 0.835 ( $p = 0.000$ ).

## DISCUSSION

### Influence of Tangible on Customer Satisfaction

Tangibles have a positive but modest effect on customer satisfaction (coefficient = 0.124). This supports SERVQUAL theory, which highlights the role of physical facilities in shaping service perceptions (Parasuraman et al., 1988). Clean and modern facilities enhance comfort (Wirtz & Lovelock, 2022), but in gyms, interpersonal aspects often play a more dominant role. The Expectancy-Disconfirmation Model suggests emotional and relational factors more strongly influence satisfaction (Oliver, 1980). Studies (Huang & Kim, 2023; Ramadhani & Arjuna, 2023; Šíma & Ruda, 2019) show that while tangibles matter, their impact is smaller than elements like reliability and empathy.

### Influence of Reliability on Customer Satisfaction

Reliability significantly affects satisfaction (coefficient = 0.121,  $p = 0.023$ ), reflecting the importance of delivering services consistently and accurately (Parasuraman et al., 1988). This fosters customer trust (Zeithaml et al., 2017). From a Relationship Marketing view, consistent service builds commitment (Morgan & Hunt, 1994). Huang & Kim (2023) and Šíma & Ruda (2019) emphasize reliability as key in fitness contexts, supported by local findings (Salsabila et al., 2023).

### Influence of Responsiveness on Customer Satisfaction

Responsiveness significantly impacts satisfaction (coefficient = 0.204,  $p = 0.003$ ). According to SERVQUAL, it reflects the willingness to help and respond promptly (Parasuraman et al., 1988). Fast, empathetic responses exceed expectations (Oliver, 1980) and strengthen emotional bonds (Morgan & Hunt, 1994). Studies (Huang & Kim, 2023; Septianan & Alie, 2023; Šíma & Ruda, 2019) affirm responsiveness as a critical satisfaction driver.

### Influence of Assurance on Customer Satisfaction

Assurance has the strongest positive effect on satisfaction (coefficient = 0.368,  $p < 0.001$ ). SERVQUAL defines assurance as the employees' knowledge and courtesy and their ability to inspire trust and confidence (Parasuraman et al., 1988). Staff expertise, courteous attitudes, and ability to provide accurate information foster trust and a sense of security (Wirtz & Lovelock, 2022). According to Relationship Marketing theory, trust is a central construct in relational exchanges and a key determinant of customer loyalty (Morgan & Hunt, 1994). Huang & Kim (2023) highlight the critical role of competent instructors in building trust. Šíma & Ruda (2019) also identify assurance as the dominant dimension influencing satisfaction, reflecting the high importance of trust in fitness environments. Local studies (Ramadhani & Arjuna, 2023) similarly emphasize assurance as key for customer satisfaction.

### Influence of Empathy on Customer Satisfaction

Empathy shows a positive and significant effect (coefficient = 0.264,  $p < 0.001$ ), greater than that of tangibles. SERVQUAL defines empathy as the provision of caring and individualized attention (Parasuraman et al., 1988). Empathy reflects staff's attentiveness and understanding of customer needs, creating a sense of being valued (Hennig-Thurau et al., 2002). According to the Expectancy-Disconfirmation Model, when interpersonal and emotional aspects like empathy exceed customer expectations, the satisfaction effect is magnified (Oliver, 1980). Moreover, Relationship Marketing theory emphasizes the importance of emotional closeness, care, and commitment in nurturing long-term customer relationships (Morgan & Hunt, 1994). Huang & Kim (2023) point out that empathy is

especially important for highly involved sport consumers who seek personal relationships. Šíma & Ruda (2019) also find empathy to be a primary factor differentiating customer satisfaction levels. Local studies (Syarifuddin & Sari, 2015) similarly find empathy to be the most determinant dimension of fitness center satisfaction in Indonesia.

### **Influence of Customer Satisfaction on Customer Loyalty**

Satisfaction has a strong effect on loyalty (coefficient = 0.835,  $p < 0.001$ ). According to the Expectancy-Disconfirmation Model and Relationship Marketing, satisfaction drives trust, commitment, and loyalty (Morgan & Hunt, 1994; Oliver, 1980). Satisfied customers are more likely to stay and recommend the service (Hapsari et al., 2016). This relationship is widely supported in both international and local studies (Huang & Kim, 2023; Purba & Siswono, 2023; Šíma & Ruda, 2019).

## **CONCLUSION**

This study demonstrates that the SERVQUAL service quality dimensions tangibles, reliability, responsiveness, assurance, and empathy have a positive effect on customer satisfaction at Rainbow Gym, with varying levels of significance. Among these, assurance exerts the strongest influence, highlighting the importance of instructor professionalism. Responsiveness and empathy also contribute significantly, while reliability and tangibles have a smaller impact, indicating that interpersonal factors play a more dominant role in shaping customer satisfaction. Furthermore, customer satisfaction has been proven to enhance loyalty, as satisfied customers tend to maintain their subscriptions and recommend the service to others. These findings reinforce that a positive experience not only boosts satisfaction but also fosters long-term relationships with customers.

The study advances service quality literature in three key aspects: 1) It extends SERVQUAL application to understudied emerging markets, particularly Indonesia's fitness sector; 2) It challenges Western-centric findings by demonstrating the superior impact of interpersonal dimensions (assurance, empathy) over tangibles in weight-training contexts; and 3) It showcases the efficacy of PLS-SEM for analyzing complex service quality relationships in niche service environments.

For Rainbow Gym's management, these findings suggest three priority actions: First, implement staff training programs focused on enhancing assurance (e.g., technical expertise, trust-building) and empathy (e.g., active listening, personalized guidance). Second, address tangible and reliability issues through facility upgrades (equipment maintenance, spatial comfort) and consistent service delivery (accurate scheduling, emergency preparedness). Third, reconsider the lifetime membership model by introducing renewal incentives or tiered subscription options to combat membership decline.

Three promising directions emerge: 1) Investigate price perception and service personalization as moderators of the satisfaction-loyalty relationship; 2) Conduct cross-industry comparisons between budget and premium gyms to test model generalizability; and 3) Employ mixed-methods approaches to capture cultural-specific service expectations that quantitative metrics may overlook. These extensions would further bridge theoretical and practical gaps in fitness service research.

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