

# Analysis Of the Quality of Childcare Services Using the Servqual Method and The Zone of Tolerance Method (Case study: Yayasan Peduli Lingkungan dan Sosial Indonesia)

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## ABSTRACT

*The purpose of this study is to use SERVQUAL and the Zone of Tolerance methodologies to evaluate daycare facilities. Research was carried out to comprehend the elements that impact the quality of childcare services to enhance the experience and happiness of service users. A quantitative descriptive-analytical technique was used. Questionnaires were sent to parents who used early childhood care programs to gather data. To assess the gap between customer expectations and perceptions of service quality, the obtained data was analysed using the SERVQUAL technique. The Zone of Tolerance approach was also used to estimate the degree of consumer satisfaction with the services delivered. Staff neatness and service costs/tariffs came out positively in the Servqual gap analysis (0.150 and 0.117, respectively). Two positive MMS value characteristics were produced using the zone of tolerance approach. The zone of tolerance encompasses two characteristics: the ability to respond quickly and efficiently while delivering services (0.017, -0.067) and the capacity to meet customers' unique requirements (0.017, -0.100). The sufficient service category includes five service qualities; if any of these are no longer acceptable to clients, the service must be corrected quickly.*

**Keywords:** service quality, child care, Servqual, zone of tolerance

## Introduction

Early childhood care is a service that provides child care and care for busy working parents.[1]. These services cover various activities, including child care, early education, and social interaction.[2]. [3] Due to social, economic, and cultural developments, the need for childcare services has increased in numerous regions. Businesses that provide child care are growing in importance as a means for parents to keep their jobs and meet the rising demand for high-quality child care in today's society.[4].

There have been many changes in family structure, and both parents being busy at work is becoming increasingly common. [5]This encourages parents to look for reliable childcare solutions outside work hours. Also, busy lifestyles and high career demands result in limited time to care for children at home, making child care the right choice.[6].

Awareness of the importance of early education in child development is increasing.[7]. Parents want to ensure that their children receive adequate learning experiences early, and quality child care can provide an environment that supports children's holistic development.[8].

[9]Increasingly advanced technology has changed people's lifestyles, causing more and more parents to need flexible and easy-to-access childcare services. These factors create a strong demand for quality, professional, safe childcare businesses.[10].

Research on childcare businesses has significant relevance because it can provide insight into how these companies can adapt to changing market needs and maintain quality standards in providing childcare services.[11]Therefore, in-depth research on aspects such as management, policy, education, and child development in the context of child care is essential to better understand the dynamics of this business and its impact on child and family development.[12].

There are already several child care centres (TPA) in Gresik Regency and around nine child care services spread across Gresik Regency. Early childhood care that is appropriate and comfortable for children is the most important thing and must be considered carefully. Caregiver standards and place standards are also factors that parents consider when choosing a childcare centre [13]. There is a childcare service institution called the Yayasan Peduli Lingkungan dan Sosial Indonesia in the Kedamean sub-district area.

Yayasan Peduli Lingkungan dan Sosial Indonesia will be the site of some child care service study. The centre has plenty of space for learning activities, including gazebos, reading rooms, rabbit parks, fish ponds, and play spaces, and it serves over sixty children. This study will use the Servqual approach to quantify the dissatisfaction between actual results and predicted outcomes and the Zone of Tolerance method to identify the aspects of a service that consumers are willing to put up with despite their lack of perfection. This study expects to enhance childcare services.

## Research methods

This research uses a quantitative approach, collecting data through questionnaires distributed to parents who use childcare services. The questionnaire consists of questions measuring service quality dimensions adapted from the SERVQUAL model.[14]The collected data will be analysed using SERVQUAL to identify gaps between parents' expectations and perceptions.[15], [16]. In addition, method ZOT will be used to determine parents' tolerance zones for gaps in service quality.[17].

SERVQUAL is a method developed by Parasuraman, Zeithaml, and Berry in 1985 to measure customer perceptions of service quality[18], [19]. This method is based on five main dimensions that influence service quality.[20], [21], namely:

1. Reliability refers to a service provider's capacity to consistently and correctly provide the promised services.
2. The service provider's eagerness to assist clients and provide prompt, efficient assistance is called responsiveness.
3. Assurance: The customer's confidence and trust in the service provider's abilities, including the expertise, credibility, and politeness of the staff.
4. Empathy (Empathy): The attention and care given by a service provider to the customer's needs and desires and the ability to understand the customer's perspective.
5. Physical Evidence (Tangible): The physical appearance of facilities, equipment, staff, and visual communications related to services.

*The zone of Tolerance (ZOT) is a concept used to determine customers' tolerance limits for the gap between their expectations and their service quality experience.*[22]. [23] ZOT is often described as the range of possible outcomes when comparing the customer's real experience with the service to their ideal expectations and the limits of their experience. [24]In method calculations, the *zone of tolerance* has several stages, as follows:

1. Calculate the Measure of Service Adequacy (MSA) with the formula  $MSA = \text{current performance} - \text{minimum performance}$  (1)

2. Calculate the Measure of Service Superiority (MSS) value using the formula  $MSS = \text{current performance} - \text{expectations}$  (2)

3. Determine the current service position at *Zone of Tolerance* with the formula

$$ZOT = \frac{MSA}{\text{Expected Value} - \text{Minimum Value}} \quad (3)$$

In this study, data for measurement was obtained through questionnaires distributed to parents. The data collected includes technical preparation, direction of development of technical response, correlation between technical respondents, level of organisational difficulty, process characteristics, targets, correlation of service attributes, and technical response in mapping tolerance zones. Additional data was obtained from interviews with the management of the Yayasan Peduli Lingkungan dan Sosial Indonesia, research objects, and organisational documents.

Previous research used the integration of Servqual and Zone of Tolerance at the BALAI DIKLAT KEAGAMAAN SEMARANG, where the results showed that the function of this integration was to clarify improvement plans. This integration is carried out by utilising existing gaps in perception and expectations from the results of the Servqual measurements and then mapping with tolerance zones.[25].

Another research was conducted using the integration of Servqual and Zone of Tolerance at the Puskesmas Bahu Kecamatan Malalayang, where the final result of this research was an increase in service

performance at the Puskesmas Bahu Kecamatan Malalayang, namely timely Puskesmas service hours. The Puskesmas facilities are comfortable, clean, and tidy (waiting room, toilet, other rooms). Clear procedures and providing information that is easy for patients to understand. Availability of medicines at the Community Health Center. The doctor/midwife shows an attitude of being willing to listen to the patient's complaints. Officers' willingness to always resolve and answer patient complaints[26].

## Results and Discussion

In the Servqual method, service attributes are needed for data processing.[27], to obtain attribute dimensions in other previous research by Ayu Dalereva Ayu (2023) and Asri Marini (2019). This research was carried out through discussions with employees of childcare services at the Yayasan Peduli Lingkungan dan Sosial Indonesia. Table 1 shows nine attribute dimensions.

**Table 1** Attribute dimensions

| No | Dimensions                                | Attribute   |
|----|---|---|
| 1  | <i>Tangible</i>                           | What do you think about the quality of facilities and infrastructure                      |
| 2  | (Physical Evidence)                       | What do you think about staff tidiness?   |
| 3  | <i>Reliability</i><br>(Reliability)       | What is your opinion about the staff's ability to provide services?                       |
| 4  |   | How do you understand the ease of service procedures?                                     |
| 5  |   | What do you think about problem-solving abilities in service?                             |
| 6  | <i>Responsiveness</i><br>(Responsiveness) | What do you think about being fast and responsive when providing service?                 |
| 7  |   | What do you think about fulfilling special requests from customers?                       |
| 8  | <i>Assurance</i><br>(Guarantee)           | What do you think about costs/tariffs for services?                                       |
| 9  | <i>Empathy</i><br>(Empathy)               | What do you think about staff behaviour in service regarding politeness and friendliness? |

After collecting data through distributing questionnaires, data recapitulation was carried out. The respondent profile section is important for understanding data distribution from Indonesian Environmental and Social Care Foundation customers. Based on the data collected, the respondent profile data was processed as shown in Table 2.

**Table 2** Responden

| No | Profile                    | Category       | Percentage |
|----|----------------------------|----------------|------------|
| 1  | Parent s gender            | Male           | 15%        |
|    |                            | Female         | 85%        |
| 2  | Parents' age               | <20            | 7%         |
|    |                            | 20-30          | 77%        |
|    |                            | 31-40          | 16%        |
|    |                            | 41-50          | 0%         |
|    |                            | >50            | 0%         |
| 3  | Residence                  | slempit        | 13%        |
|    |                            | dawar          | 20%        |
|    |                            | banjaran       | 19%        |
|    |                            | meranti        | 15%        |
|    |                            | benjeng        | 23%        |
|    |                            | tanjungan      | 10%        |
| 4  | Parent's employment status | Part-time      | 14%        |
|    |                            | Full time      | 7%         |
|    |                            | Self-employed  | 35%        |
|    |                            | Civil servants | 44%        |
| 5  | Number of children in care | 1              | 62%        |
|    |                            | 2              | 33%        |
|    |                            | >2             | 5%         |
| 6  | Child's age                | 0-2 year       | 0%         |
|    |                            | 3-5 year       | 90%        |

|   |              |            |     |
|---|--------------|------------|-----|
|   |              | <5 year    | 10% |
|   |              | daily      | 87% |
| 7 | Service type | weekly     | 0%  |
|   |              | Monthly    | 0%  |
|   |              | Time clock | 13% |

To make it easier to map respondents' statistics, they are divided based on respondent profiles such as parents' gender, age of parents, place of residence, occupation, number of children, age of children, and type of service. Female customers are the ones who use childcare services the most, with a percentage of 85%. For the age group 20-30 years, 77% of customers are at this childcare facility. Based on data, residents from the Beijing sub-district are the largest customers of the Yayasan Peduli Lingkungan dan Sosial Indonesia childcare, with a percentage of 23%. Civil servants are the most dominant job and frequently use this childcare service. The highest number of entrusted is one child, with a percentage of 62% in the age range of 3-5 years, while the highest type of service is daily, with 87%.

The correlation results between each indicator's score and the total score of the variable indicators are used to obtain a validity test. [28] Next, we used a 0.05 significance threshold to examine the correlation with the R-value in Table. A variable is deemed legitimate if its correlation value exceeds the r table value. The attribute is considered genuine if the computed R-value is larger than the r-table value for  $df = N-2$ . With 60 responses, the degrees of freedom are  $60-2= 65$ . A crucial value of 0.254 will be derived from these respondents (as seen in the r-table value). Table 3 displays the validity test results conducted on the respondents' replies.

**Table 3** Validity test

| No | Attribute | Perepsi | Hope  | Minimum | R table (0,05) | Is    |
|----|-----------|---------|-------|---------|----------------|-------|
| 1  | A1        | 0,689   | 0,682 | 0,619   | 0,254          | Valid |
| 2  | A2        | 0,684   | 0,837 | 0,096   | 0,254          | Valid |
| 3  | A3        | 0,656   | 0,680 | 0,513   | 0,254          | Valid |
| 4  | A4        | 0,671   | 0,889 | 0,570   | 0,254          | Valid |
| 5  | A5        | 0,678   | 0,558 | 0,467   | 0,254          | Valid |
| 6  | A6        | 0,447   | 0,842 | 0,432   | 0,254          | Valid |
| 7  | A7        | 0,639   | 0,808 | 0,612   | 0,254          | Valid |
| 8  | A8        | 0,639   | 0,702 | 0,324   | 0,254          | Valid |
| 9  | A9        | 0,733   | 0,814 | 0,557   | 0,254          | Valid |

Reliability is an index that shows how much a measuring instrument can be trusted or reliable.[29]. Evaluating a survey's validity as a tool for measuring a construct or Reliable constructions is implemented via reliability testing. Reliability in questionnaires is the degree to which a statement stays unchanged or consistent from one administration to the next. Reliability may be defined as the degree to which results remain unchanged when tested across different samples. Statistically, statisticians utilise the Cronbach Alpha test to find out how trustworthy the survey is. Data is deemed credible if its Cronbach alpha value is higher than 0.6. according to [30]. Reliability test results with Table 4.

**Table 4** Reliability test

| Questionnaire | Correlation value | R critical | Information |
|---------------|-------------------|------------|-------------|
| perception    | 0,891             | 0,6        | Reliable    |
| Hope          | 0,935             | 0,6        | Reliable    |
| minimum       | 0,780             | 0,6        | Reliable    |

Assumption number one in the Servqual model is that customers evaluate services relative to their ideal counterparts across all relevant criteria. A favourable impression of service quality will prevail if performance is up to par, and a negative impression will prevail if performance falls short [31]. Put simply, this approach examines the difference between two primary factors, namely, the service that is anticipated and the service that is received. [32] SERVQUAL is crucial for comprehending how clients evaluate the quality of service, particularly in interactions between clients and service providers. To gauge how well a service meets the expectations of its users, SERVQUAL compares the users' expectations with their actual experiences.

$$\text{Servqual Gap Score} = \text{Perceived Value} - \text{Expected Value}$$

The questionnaires distributed to 60 respondents, who are customers or customers who use childcare services, obtained valid and reliable results. Table 5 shows the results of the Servqual gap scores from 9 service attributes.

Table 5 Servqual gap calculation

| Attribute   | Code | Perception | Hope  | GAP    |
|---|------|------------|-------|--------|
| What do you think about facilities and infrastructure?                                    | A1   | 3.333      | 3.367 | -0.033 |
| What do you think about staff tidiness?   | A2   | 3.683      | 3.533 | 0.150  |
| What do you think about the staff's ability to provide service?                           | A3   | 3.450      | 3.467 | -0.017 |
| How do you understand the ease of service procedures?                                     | A4   | 3.433      | 3.483 | -0.050 |
| What do you think about problem-solving abilities in service?                             | A5   | 3.417      | 3.450 | -0.033 |
| What do you think about being fast and responsive when providing service?                 | A6   | 3.483      | 3.550 | -0.067 |
| What do you think about meeting special requests from customers                           | A7   | 3.400      | 3.500 | -0.100 |
| What do you think about costs/tariffs for services?                                       | A8   | 3.750      | 3.633 | 0.117  |
| What do you think about staff behaviour in service regarding politeness and friendliness? | A9   | 3.533      | 3.600 | -0.067 |

The results of calculating the Servqual Gap score in Table 5 show that of the nine service attributes, only two service attributes received positive values, namely 0.150 and 0.117. A positive Servqual gap value indicates that the service attribute is satisfactory. Meanwhile, a negative Servqual gap value indicates that the service attribute still does not satisfy customers. This is in line with the Servqual model developed by Parasuraman. However, it is necessary to map service attributes to find out whether consumers can still accept service attributes that are unsatisfactory or unsatisfactory. Attribute mapping with methods *zone of tolerance* (ZOT) based on the average score of perceived service level (performance), expected service level, and minimum service level for each attribute to calculate the MSA (Measure of Service Adequacy), MSS (Measure of Service Superiority) and ZOT (*Zone of Tolerance*). MSA, MSS, and ZOT value measurements are based on equations 1, 2, and 3.

The data processing results from the minimum service questionnaire, expected service questionnaire, and current service questionnaire were obtained, as shown in Picture 1.

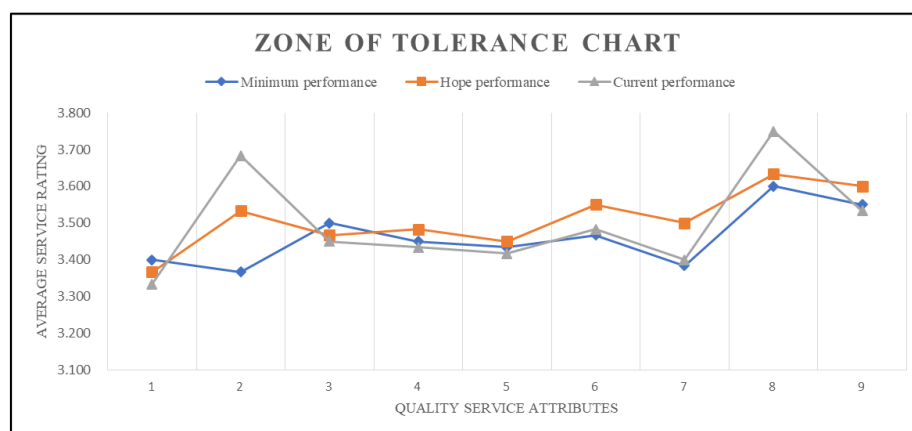


Figure 1. Service Zone of Tolerance Chart Yayasan peduli Lingkungan dan Sosial Indonesia

Based on the graph above, several attributes with negative values are outside the minimum service line in the ZOT calculation. The Zone of Tolerance graph shows that several attributes need serious attention to improve the quality of services of Yayasan Peduli Lingkungan dan Sosial Indonesia.

Table 6 shows the calculation of the Zone of Tolerance, and several services need to be improved by Yayasan Peduli Lingkungan dan Sosial Indonesia.

Table 6 Zot calculation

| Attribute | Minimum performance | Hope  | Current performance | MSA    | MSS    | ZOT    |
|-----------|---------------------|-------|---------------------|--------|--------|--------|
| A1        | 3.400               | 3.367 | 3.333               | -0.067 | -0.033 | 2.000  |
| A2        | 3.367               | 3.533 | 3.683               | 0.317  | 0.150  | 1.900  |
| A3        | 3.500               | 3.467 | 3.450               | -0.050 | -0.017 | 1.500  |
| A4        | 3.450               | 3.483 | 3.433               | -0.017 | -0.050 | -0.500 |
| A5        | 3.433               | 3.450 | 3.417               | -0.017 | -0.033 | -1.000 |
| A6        | 3.467               | 3.550 | 3.483               | 0.017  | -0.067 | 0.200  |
| A7        | 3.383               | 3.500 | 3.400               | 0.017  | -0.100 | 0.143  |
| A8        | 3.600               | 3.633 | 3.750               | 0.150  | 0.117  | 4.500  |
| A9        | 3.550               | 3.600 | 3.533               | -0.017 | -0.067 | -0.333 |

Based on Table 6, of the nine attributes, there are only two service attributes whose MSS values are positive, 0.150 and 0.117. This shows that customers are still not satisfied with the services provided. However, two service attributes have a positive MSA value and a negative MSS value. These two attributes are included in the zone of tolerance, which means that the service received by customers in these two service attributes can still be accepted or tolerated by customers. These two attributes include being fast and responsive in providing service and responding to special requests from customers. Meanwhile, the MSA value is negative for the other five attributes, which means that customers can no longer tolerate it. Priority attributes that must be improved include the ability to solve problems in service (-1.000), ease of service procedures (-0.500), and staff behaviour in service related to politeness and friendliness (-0.333).

## Conclusion

The quality of Yayasan Peduli Lingkungan dan Sosial Indonesia, child care services, is still unable to satisfy customers. Dissatisfied customers can be seen from negative Servqual gap values for 7 out of 9 service attributes. To improve the quality of service, it is necessary to improve and evaluate facilities and infrastructure immediately. Staff training should be provided to improve their abilities. Creating clear guidelines will help increase the efficiency of service procedures. The problem resolution system needs to be improved to better handle customer complaints. Implementing technology is also important to speed up the service process. Additionally, focusing on training in politeness, friendliness, and empathy when interacting with customers will be helpful. Meanwhile, five service attributes are included in the adequate service category, meaning customers can no longer tolerate these attributes and need immediate improvement. Meanwhile, two attributes were obtained from the method zone of tolerance that fell into the category *zone of tolerance*. Attributes included in this category are being fast and responsive in providing services (0.017, -0.067) and fulfilling special requests from customers (0.017, -0.100).

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