International Journal of Engineering Research and Development
e- ISSN: 2278-067X, p-ISSN: 2278-800X, www.ijerd.com
Volume 21, Issue 10 (October 2025), PP 105-116

The Role of Student Expectations and Service Quality Perceptions of Literacy Achievement: An Analysis Using the SERVQUAL Model and Expectation-Value Theory

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ABSTRACT
Although efforts to improve literacy in elementary schools often focus on improving service quality, students' internal psychological factors are frequently overlooked.Stemming from this premise, this study aims to analyze student satisfaction with educational services via the service quality (SERVQUAL) method, examine the influence of service perception and expectations on literacy achievement, and interpret the key role of student expectations using the Expectancy-Value Theory framework.Using a quantitative approach, data were collected from 30 fifth-grade students through a validated and reliable SERVQUAL-based questionnaire and analyzed using multiple linear regressions.The results revealed a paradoxical finding: regression analysis showed that students' perception of service quality did not have a statistically significant influence on literacy achievement ($p > 0.05$).Conversely, student expectations were positive and significant predictors ($p < 0.05$). This finding is particularly relevant given that the SERVQUAL analysis also identified a negative gap (-0.175) between students' expectations and the reality of the services they receive. Interpreted through Expectancy-Value Theory, these results indicate that internal motivation reflected in student expectations is a more dominant driver of achievement than external service conditions. Therefore, this study implies that intervention strategies for literacy improvement should not only focus on service enhancements but also include programs that actively nurture and strengthen students' academic aspirations and intrinsic motivation.
Keywords*: Service Quality, Literacy, Student Expectations, Expectancy-Value Theory.*

Date of Submission: 04-10-2025 Date of acceptance: 14-10-2025

I. INTRODUCTION

Schools and other educational institutions, formal or non-formal, face the challenge of maintaining educational quality.Consequently, management practices, often drawn from the business world, are increasingly being applied to improve educational quality. In the educational sphere, challenges are not only limited to poor services or low student academic performance but also encompass a wider range of issues. If meeting customer needs is a primary quality goal, then it is crucial to first identify these customers. They are broadly classified into internal and external groups [1]. In the field of education, there are three types of customers.The first group consists of students who directly receive the services.The second group includes parents, sponsors, and guardians with a direct interest in the institution.The third are parties with an important, albeit indirect, role, such as the government, industry, and society as a whole.Therefore, an educational institution is considered a quality institution only if its clients, both internal and external, are satisfied with the services provided.

Sedayu State Elementary School is a public primary school located in the Gemuh District of Kendal Regency, Central Java, with approximately 186 students enrolled. This year, the school was selected as a target for the 2023 'Kampus Mengajar 5' (Teaching Campus 5) program. This initiative targets schools with low literacy and numeracy levels, based on the 2021 National Assessment, and provides them with quality reading books from the National Language Agency. In general, literacy includes the ability to access, understand, evaluate, and use information from various sources for personal, social, and professional purposes[2]. In addition to reading literacy, there are several other literacies, such as digital, scientific, numerical, and data literacy, each with its own characteristics and assessment tools [3].

At Sedayu State Elementary School, a target of the 'Kampus Mengajar 5' program, students' literacy and numeracy skills are underdeveloped. This is evidenced by the 2021 National Assessment, where the school's literacy score was 1.48, below the minimum competency level.This gap requires continuous improvement.Traditionally, improvement efforts have focused on enhancing the quality of educational services.

However, this approach sometimes overlooks an important theoretical puzzle: the role of students' internal psychological factors. In addition to external factors such as service quality, internal factors such as expectations, beliefs, and the values they attach to education may play a more crucial role in determining learning outcomes. Recent research has confirmed that student motivation is a strong predictor of academic success [4]. Students' expectations are not just a wish list but can be seen as a reflection of their motivation and values regarding education.Therefore, this study aims to analyze the factors influencing low literacy and numeracy at Sedayu State Elementary School, examining how high-quality educational services can meet students' needs and enhance satisfaction.

In response to the identified problem background, this study examines the role of student expectations and perception of service quality on literacy achievement using the SERVQUAL model and Expectancy-Value Theory.In this study, the author adopts a dual approach to the problem.First, to measure the quality of educational services from a student's perspective, the SERVQUAL model is adopted. This model was chosen because it is a widely tested and validated framework for measuring service quality by comparing perceptions and expectations across different sectors, and has proven to be particularly appropriate for basic education contexts [5]. Second, to understand the internal psychological factors underlying achievement, this study uses Expectancy-Value Theory (EVT) as an analytical framework. EVT is particularly relevant because it directly articulates how students' beliefs about their ability to succeed (expectancy) and the values they attach to academic tasks (value) collectively predict their motivation and academic achievement [6]

This combination of an empirical approach (SERVQUAL) and a theoretical framework (EVT) allows the research to measure the influence of external factors and interpret the role of internal factors in driving literacy achievement.This aligns with the study's dual purpose: to measure the influence of service quality on literacy scores and to analyze the role of students' expectations as a psychological construct and a potential main driver of their academic success.

II. LITERATURE REVIEW

In the contemporary educational landscape, educational institutions are increasingly seen as service providers whose quality has a direct impact on the experience of stakeholders, especially students [7]. A large number of studies have confirmed the existence of a strong positive relationship between students' perception of service quality and their satisfaction level[8]. Student satisfaction is an important performance indicator for educational institutions [9]

However, when the focus shifts from affective outcomes such as 'satisfaction' to measurable cognitive outcomes such as 'academic achievement,' the existing literature reveals a significant gap. The direct relationship between perceived service quality and students' academic achievement—for instance, test scores or literacy scores—is explicitly described as being 'rarely proposed and tested' [10]. Most research tends to view service quality as an antecedent to student satisfaction and loyalty rather than a direct predictor of learning outcomes [10]. Nevertheless, the study by [10] sets an important precedent by finding that four of the five service quality dimensions (empathy, reliability, responsiveness, and assurance) can contribute significantly to students' academic achievement.

The SERVQUAL model has been widely adopted to measure perceived service quality in educational environments[7]. This model, with its five dimensions—tangibles, reliability, responsiveness, assurance, and empathy—is considered a logical and suitable tool for measuring service quality, including at the primary and secondary education levels [11]

Although external factors, such as service quality, are important, students' internal psychological factors cannot be ignored. Expectancy-Value Theory (EVT) offers a dominant framework for explaining why individuals choose and persist in academic tasks [6]. This theory states that a person's choices, persistence, and performance are a function of their expectancy for success and the subjective task value they attach to the task [6].

Therefore, given the research gap concerning the direct link between perceived service quality and academic achievement and acknowledging the validity of the SERVQUAL model in education, this study aims to address this gap.Specifically, this study investigates the direct influence of perceived service quality, as measured by the SERVQUAL framework, and student expectations on literacy achievement at the elementary school level using EVT as an interpretive lens.

III. MATERIAL AND METHODS

3.1 Research Design

This study adopted a quantitative approach with a cross-sectional survey design.This design was chosen to test the relationship between the independent variables (perception of service quality and expectations) and the dependent variable (literacy achievement) at a specific time.

3.2 Participants and Setting

The population of this study was all 5th and 6th grade students at State Elementary School Sedayu, Kendal Regency.The research sample consisted of 30 grade 5 students selected using purposive sampling techniques based on their involvement in the 'Teaching Campus 5' program and the availability of relevant literacy score data.

3.3 Research Instrument and Variables

The primary data in this study were collected using questionnaires designed to measure two main independent variables: students' perceptions of the quality of services received (reality) and their expectations of those services (expectations).The dependent variable, literacy achievement, was measured using secondary data in the form of students' test scores obtained from school documentation.

To measure perceptions and expectations, questionnaire items were adapted from the SERVQUAL model, which measures service quality through five dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy. These five dimensions were operationalized into 15 statement items that were assessed by students.The details of each attribute and their grouping by dimension are presented in Table 1.

Table 1 SERVQUAL Model Attributes

Dimension	Attributes
Tangible	1. Safe and clean school environment 2. Adequate learning media 3. The teacher helps students by immediately addressing the material that they do not understand
Reliability	4. The teaching and learning process is carried out well and smoothly 5. Teachers are able to convey the subject matter well 6. The lesson schedule is carried out appropriately and with disciplined
Responsiveness	7. Teachers' willingness to help students with learning difficulties 8. Teachers' speed in responding to student learning problems 9. Library staff serve students well
Empahty	10. Teachers always motivate students to continue learning 11. Teachers pay attention to students who do not understand the material being taught 12. Teaching and learning process that is easy to comprehend and understand
Assurance	13. The teacher assigns assignments wisely and proportionately to students 14. Good communication is fostered between students and teachers 15. Teachers are fair to all students

3.4 Data Collection Procedure

The survey design in this study was carried out in several steps.

Step 1: conduct literature studies by data collection that involves reading literature, books, journals, references, and internet materials relevant to the research topic

Step 2: Direct observation at the research location was conducted to identify the components relevant to the study.This field study involved direct observation of the subjects to obtain the required data.In this case, the researcher observed and sought information regarding the performance of teachers at Sedayu State Elementary School and its potential relationship with student literacy scores.The characteristics of the respondents were identified by outlining the characteristics that will be sampled for the study.

Step 3: A survey method was employed using questionnaires as the primary tool for data collection from the sample.Respondents were asked to rate the statements on a predetermined scale.Each statement had five response options with corresponding scores based on a Likert-type scale, as detailed in Table 2.

Table2Likert Scale

Answer	Score
Very Satisfied	5
Satisfied	4
Neutral	3
Dissatisfied	2
Very Dissatisfied	1

3.5 Data Processing and Analysis Methods

The calculated scores were entered into IBM SPSS Statistics for analysis. In this context, data analysis is the process of transforming raw data into meaningful insights to answer the research questions

1. Data Analysis

a. SERVQUAL (Service Quality) Gap Calculation

SERVQUAL is a method used to measure service quality by calculating the gap between customer expectations and their perceptions of the service received.This involves administering a questionnaire with paired statements regarding expectations and perceptions.The SERVQUAL score for each attribute can be positive (exceeding expectations) or negative (falling short of expectations). The score is calculated using the following equation (1)[12].

(Servqual Score = Perception Score – Expectation Score) (1)

b. Multiple Regression Analysis

Multiple linear regression analysis was used to predict the value of the dependent variable (literacy level) based on the independent variables (perceived reality and expectations). As a method, it models the relationship between a dependent variable and two or more independent (predictor) variables using the following general equation [13] The multiple linear regression equation is mathematically expressed by (2). The Multiple Linear Regression explained in this section uses the Ordinary Least Squares (OLS) approach [14].The explanation is divided into five stages.

1. Data Preparation (Data Tabulation)
2. Multiple Linear Regression Model Estimation
3. Classical Assumption Testing
4. Model Fit Assessment (e.g., F-test, R-squared)
5. Interpretation of the Multiple Linear Regression Model

(Y = a + b1 X1 + b2 X2 + … + bn Xn) (2)

Description of equation:

Y = dependent variable (the value of the variable to be predicted)
a = constant
b1, b2, …., bn = Regression Coefficient Value
X1, X2, …, Xn = Independent variable

If there are two independent variables, X1 and X2, then the regression equation takes the form where the regression coefficients, b1 and b2, have values:

- The value is zero. In this case, variable Y is not influenced by X1 and X2.
- The value is negative. Here, there is an inverse relationship between the dependent variable Y and the variables X1 and X2.
- The value is positive. Here, there is a unidirectional relationship between the dependent variable Y and the independent variables X1 and X2.

2. Psychometric Properties Test

a. Validity Testing

Validity testing is used to determine whether a questionnaire measures what it is intended to measure.A significance test was conducted by comparing the calculated Pearson correlation coefficient (r-count) for each item against the total score with a critical value from the r-table. In other words, an item is considered valid if its score has a positive and significant correlation with the total variable score [15], [16]. With a sample size (n) of 30, the degrees of freedom (df) are n-2 = 28. At the 5% significance level, the critical r-table value is 0.3610.Therefore, the decision rule used is as follows:

- If r-count > 0.3610, the item was valid.
- If r-count < 0.3610, the item was invalid.

b. Reliability Testing

Reliability testing assesses the consistency of a measurement instrument that indicates a variable or construct. A questionnaire is considered reliable if respondents' answers are consistent or stable over time. A common measure of internal consistency is Cronbach's alpha, with a value of 0.70 or greater generally considered to indicate acceptable reliability [17].

3. Classical Assumption Tests

a. Normality Test

The normality test can be conducted using the One-Sample Kolmogorov-Smirnov test. According to this test, if the significance value (p-value) is greater than 0.05, the data are considered normally distributed. Conversely, if the p-value is less than or equal to 0.05, the data areconsidered to be not normally distributed (Habibzadeh, 2024).

b. Multicollinearity Test

According to [19], multicollinearity does not occur if the tolerance value is greater than 0.10 and the Variance Inflation Factor (VIF) value is less than 10.00. Multicollinearity occurs when the independent variables in a regression model are highly correlated with each other. This test aims to avoid issues such as unstable coefficient estimates, which make it difficult to assess the individual impact of each independent variable on the dependent variable.

c. Heteroscedasticity Test

According to [19], heteroscedasticity is not present if there is no clear pattern (e.g., wavy, widening, or narrowing) in the scatterplot of the regression residuals. The points should be randomly scattered above and below the zero line on the Y-axis.

d. Autocorrelation Test

According to [19], the Durbin-Watson (DW) test is a common test for checking autocorrelation. A widely used rule of thumb for interpreting the DW statistic is as follows:

- A DW value approaching zero indicates a strong positive autocorrelation.
- A DW value between 1.5 and 2.5 generally indicates no significant autocorrelation.
- A DW value approaching 4 indicates a strong negative autocorrelation.

4. Partial t-Test

According to[19], the t-test is used to determine whether an independent variable (X) has a statistically significant partial influence on the dependent variable (Y). The decision to accept or reject the hypothesis was based on a comparison of the calculated significance value with a predetermined level ($\alpha = 0.05$).

Decision Criteria:

1. Based on the Significance Value (from the SPSS output):
   - If the significance value is < 0.05, the independent variable has a significant effect on the dependent variable.
   - If the significance value is > 0.05, the independent variable does not have a significant effect on the dependent variable.
2. Based on the t-value comparison:
   - If the calculated t-value > t-table value, the independent variable has a significant effect on the dependent variable (Y).
   - If the calculated t-value < t-table value, the independent variable does not have a significant effect on the dependent variable (Y).

5. Simultaneous F-Test

The F-test was conducted to determine whether all independent variables included in the model had a significant simultaneous (combined) influence on the dependent variable.This test was performed at a 0.05 significance level.

Decision Criteria:

1. Based on the Significance Value (from the SPSS output):
   - If the significance value is < 0.05, the independent variables collectively have a significant effect on the dependent variables.
   - If the significance value is > 0.05, the independent variables collectively do not have a significant effect on the dependent variable.
2. Based on the F-value Comparison:
   - If the calculated F-value is greater than the F-table value, the independent variables simultaneously have a significant effect on the dependent variable (Y).
   - If the calculated F-value is<the F-table value, the independent variables simultaneously do not have a significant effect on the dependent variable (Y).

3.6 Hypotheses

Based on the research problem and objectives, the following hypotheses are proposed.

- H0: There is no significant simultaneous influence of variables X1 and X2 on variable Y.
- H1: There is a significant simultaneous influence of variables X1 and X2 on variable Y.

These hypotheses were tested using the F-test in multiple linear regression analysis.

IV. RESULTS

4.1 Identify Respondent Characteristics

The characteristics of the respondents in this study were grouped into several categories, namely gender and age.A total of 30 questionnaires were distributed for this purpose.All 30 questionnaires were completed and deemed suitable for further analysis. The demographic breakdown by gender is presented below. As shown in Table 3, the 30 respondents were fifth-grade students from the State Elementary School Sedayu.The gender distribution was evenly split, with 15 male (50.0%) and 15 female (50.0 %) respondents.This indicates that the sample was perfectly balanced in terms of gender.As shown in Table 4, the age distribution of the 30 fifth-grade respondents from State Elementary School Sedayu was uniform, with all students (100%) aged between 10 and 12 years.

Table 3 Respondent based on Gender

Gender	Number of Respondent (person)	Percentage(%)
Male	15	50,0
Female	15	50,0
Total	**30**	**100**

Table 4 Gender Respondent Description

Age	Number of Respondent	Percentage (%)
10-12 years	30	100
Total	30	100

4.2 Questionnaire Distribution

After data collection was completed, the total scores for the perception (reality) and expectation scales were tabulated for each respondent. Table 5 presents a summary of the total scores obtained from each of the 30 respondents. The raw data presented in this table form the basis for all subsequent statistical analyses, including the validity, reliability, and multiple regression analyses that will be outlined in the next section

Table 5 Total Questionnaire Score

Respondent	Number of Perception	Number of Expectation	Respondent	Number of Perception	Number of Expectation
R16	62	61	R1	51	60
R17	56	52	R2	57	70
R18	63	56	R3	47	70
R19	58	57	R4	61	57
R20	58	53	R5	53	49
R21	60	57	R6	46	55
R22	54	62	R7	48	70
R23	62	52	R8	58	50
R24	63	49	R9	50	70
R25	37	51	R10	54	61
R26	37	51	R11	62	55
R27	54	57	R12	64	55
R28	69	58	R13	37	51
R29	69	59	R14	64	51
R30	61	63	R15	65	56

4.3 Validity Test

1. Perception Level Validity Test

The results of the above validity test show that of the 15 statement items used in this study to measure the perception variable, there are two invalid items, namely P.1 and P.7, with a calculated r value of less than the r table and in item P.1, which is with a calculated r of 0.005092, and a calculated r value of P7 which is 0.322969.

2. Expectation Level Validity Test

The results of the above validity test show that of the 15 statement items used in this study to measure the perception variables, there are four invalid items, namely P5, P8, P12 and P.14 with a value of r calculated less than r of the table and in an item, namely P5 with r calculated as 0.214546.P8 with r = 0.290763.P12 with r count 0.327321, and P14 with r count 0.343625.

4.4 Reliability Test

After conducting the validity test and removing invalid items from the questionnaire, the next step was to assess the instrument's reliability to ensure the internal consistency of the measurement scale.This test uses Cronbach's alpha statistic, where a value of 0.70 or greater is considered to indicate acceptable reliability.Tables 6 and 7 present the results of the reliability tests for the perception (reality) and expectation scales.The results showed that both scales possessed excellent internal consistency, with Cronbach's alpha values of 0.831 for the perception scale and 0.750 for the expectation scale, both of which were above the recommended threshold.

Table6 Perception Level Reliability Test

Cronbach'sAlpha	N ofitems
0.831146	15

Table7Expectation Level Reliability Test

Cronbach'sAlpha	N ofitems
0.749782	15

4.5 Servqual Analysis

A SERVQUAL gap analysis was performed to quantitatively measure service quality by comparing the average perception scores (the reality students receive) with the average expectation scores for each valid service attribute. The results of this analysis, grouped by the five service quality dimensions, are shown in Table 8.

The analysis revealed an overall average gap score of -0.175, indicating that, in general, the quality of services did not meet student expectations.More specifically, the largest negative gap was found in the assurance dimension.In contrast, the tangibles dimension was the only one to show a positive gap, suggesting that the physical aspects of the service exceeded student expectations.

Table 8 Result of SERVQUAL

Dimension	Attributes	Perception	Expectation	Gap Value
Tangible				
	x2	4.1	3.666667	0.433333
	x3	3.8	3.5	0.3
Reliability	x4	4.2	4.133333	0.066667
	x6	3.633333	3.866667	-0.23333
Responsivenes				
	x9	3.866667	4.2	-0.33333
Empahty	x10	3.966667	4.033333	-0.06667
	x11	3.333333	3.533333	-0.2
	x12	3.733333	3.766667	-0.03333
Assurance	x13	3.7	3.7	0
	x15	3.933333	4.333333	-0.4
	Total	**34.53333**	**34.96667**	**-0.43333**
	Average	**3.837037**	**3.885185**	**-0.04815**

4.6 Classic Assumption Test

1. Data Normality Test

Before performing regression analysis, several classical assumptions must be met. First, the residual normality assumption was tested using a Normal P-P Plot. As shown in Figure 1, the data points generally follow the diagonal line without significant deviation. This provides a visual indication that the residuals are normally distributed, thus fulfilling a fundamental assumption for regression analysis.

2. Multicollinearity Test

Furthermore, multicollinearity testing was performed to ensure that there was no high correlation between independent variables that could interfere with the stability of the regression model. Table 9 presents the Tolerance and Variance Inflation Factor (VIF) values for the 'reality' and 'expectation' variables. With a Tolerance value of 0.999 (above the threshold of 0.10) and a VIF value of 1.001 (below the threshold of 10.00) for both variables, it can be concluded that this regression model is free from the problem of multicollinearity.

3. Heteroscedasticity Test

The assumption of homoscedasticity, which means that the residual variance is constant, was tested through a visual inspection of the scatterplot of the standardized predicted values (ZPRED) against the standardized residuals (SRESID).The plot in Figure 2 shows that the data points are randomly scattered above and below the zero line on the Y-axis and do not form a systematic pattern.This random distribution indicates that the regression model is free from heteroscedasticity.

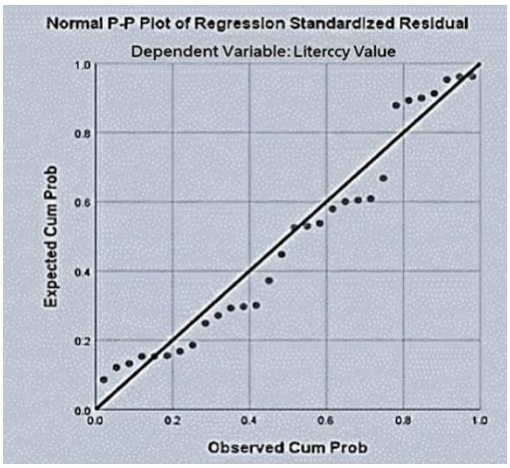

Figure 1 Normality Graphic P-P Plot

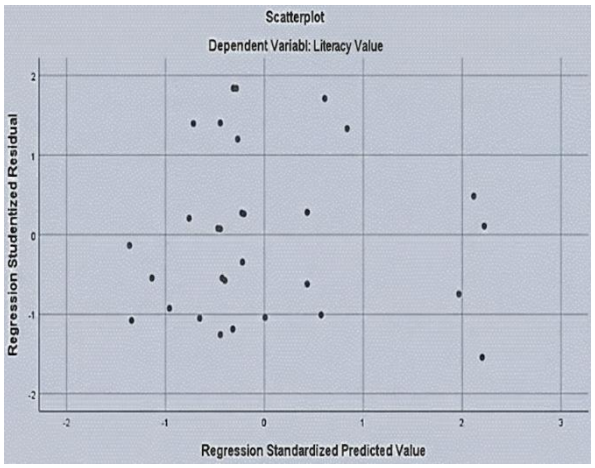

Figure 2 Scatterplot

Table 9 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-5.474	31.062		-.176	.861		
	Perception	-.156	.369	-.075	-.424	.675	.999	1.001
	Expectation	1.296	.573	.397	2.260	.032	.999	1.001

a. Dependent Variable: Literacy Value

4. Autocorrelation Test

The results of the autocorrelation test (Table 10) show a Durbin-Watson statistic of 2.410. To interpret this value, the upper critical value (dU) was determined from the Durbin-Watson table for k=2 predictors and a sample size (n) of 30 at a 5% significance level. The resulting decision rule is as follows: dU (1.567) < Durbin-Watson (2.410) < 4-dU (2.433).Because the calculated Durbin-Watson statistic falls within this range, it can be concluded that there are no symptoms of autocorrelation in the regression model.

Table 10 Model Summary

ModelSummary[b]					
Model	R	R Square	AdjustedR Square	Std.Errorof theEstimate	Durbin-Watson
1	.407[a]	.165	.104	16.98684	2.410
a.Predictors:(Constant),Expectation,Perception					
b.DependentVariable:Literacy value					

4.7 Model Feasibility Test

1. Hypothesis Testing Results t – statistics

Once all classical assumptions were met, hypothesis testing was performed to analyze the influence of independent variables on the dependent variable.A partial t-test was conducted to determine the individual influence of each independent variable (perceptions of reality and expectations).Table 11 presents the results of the regression coefficient analysis.

Based on the table, the 'reality perception' variable (X1) does not show a statistically significant influence on the literacy value, as evidenced by a significance value of 0.675 ($p > 0.05$). In contrast, the 'expectation' variable (X2) had a positive and statistically significant influence on the literacy value, with a significance value of 0.032 ($p < 0.05$).

Table 11 Partial t-test result coefficients

Model		Unstandardized Coefficients		Standardiz ed Coefficient s	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-5.474	31.062		-.176	.861		
	Perception	-.156	.369	-.075	-.424	.675	.999	1.001
	Expectation	1.296	.573	.397	2.260	.032	.999	1.001
a. Dependent Variable: Literacy Value								

a. Interpretation Based on t-value Comparison

In multiple regression analysis, the significance of each independent variable was assessed using a t-test.If a variable's calculated t-statistic exceeds the critical t-value from the t-distribution (determined by the chosen alpha level and degrees of freedom), the null hypothesis is rejected. This indicates that the independent variable has a statistically significant effect on the dependent variable [17]. With a significance level (α) of 5% and degrees of freedom (df) of n-k-1 = 27, the t-table value is 2.052.

- The calculated t-value for the reality variable (X1) was -0.424.Because $|-0.424| < 2.052$, we fail to reject the null hypothesis (H0).This means that the reality variable (X1) does not have a significant effect on the literacy variable.
- The calculated t-value for the expectation variable (X2) was 2.260.Because $2.260 > 2.052$, the null hypothesis (H0) was rejected, and the alternative hypothesis (H1) was supported.This means that the expectation variable (X2) has a significant effect on the literacy variable (Y).

2. Test Results F

Next, an F-test was performed to assess the overall significance of the model by evaluating the simultaneous influence of all independent variables on the dependent variable. A summary of the Analysis of Variance (ANOVA) results for this model is presented in Table 12.The test yielded a calculated F-statistic of 2.674, with a corresponding significance level of 0.087. Since this significance value is greater than the specified alpha level ($\alpha = 0.05$), it is concluded that the perception of reality and expectation variables, taken together, do not have a statistically significant influence on the literacy score.

Table 12 Test F ANOVA

ANOVA[a]						
Model		Sum of Squares	df	MeanSquare	F	Sig.
1	Regression	1543.243	2	771.622	2.674	.087[b]
	Residual	7790.923	27	288.553		
	Total	9334.167	29			

- The F-test decision rule states that if the calculated F-value (F-statistic) is greater than the F-table value, the independent variables have a significant, simultaneous effect on the dependent variable.
- The critical F-table value is determined using the formula F(k, n-k), where 'k' is the number of independent variables a and n is the sample size.For this study, with k=2 and n=30, the degrees of freedom were (2, 28).At the 5% significance level, this corresponds to an F-table value of 3.34.
- The calculated F-statistic for this model was 2.674. Since the calculated F-value is less than the F-table value (2.674 < 3.34), it can be concluded that the independent variables (X) do not have a significant simultaneous effect on the dependent variable (Y)

3. Coefficient of Determination (R-Square)

To determine the extent to which the independent variables explain the variation in the dependent variable, a coefficient of determination (R-squared) analysis was performed.Table 13 presents a model summary showing an R-squared value of 0.165.This figure indicates that the independent variables (expectations and perceptions of reality) collectively explain 16.5% of the variance in the literacy scores. The remaining 83.5% of the variance is explained by other variables not included in this regression model

Table 13 Model Summary[b] R Square

ModelSummary[b]					
Model	R	R Square	AdjustedR Square	Std.Erroroftheb Estimate	Durbin-Watson
1	.407[a]	.165	.104	16.98684	2.410
a.Predictors:(Constant),Expectation,Preception					
b.DependentVariable:Literacy Value					

4.8 Multiple Regression Test

Based on the results of the multiple regression analysis, a mathematical equation was formulated to model the relationship between the independent and dependent variables.The Regression Coefficients table provides the necessary values to construct this model, including the constant (intercept) and regression coefficient (B) for each predictor.Using the values from the 'Unstandardized Coefficients B' column, the resulting multiple linear regression equation is as follows:

Literacy Value (Y) = -5.474 - 0.156(Reality) + 1.296(Expectation)

This equation implies that a one-point increase in the expectation score (X2) is associated with a 1.296-point increase in literacy value (Y). Meanwhile, the perceived reality score (X1) has a statistically insignificant negative association

Table 15 Coefficients[a]

Model		Unstandardized Coefficients			Standardized Coefficients			Collinearity Statistics	
		B	Std. Error		Beta	T	Sig.	Tolerance	VIF
1	(Const ant)	-5.474	31.062			-.176	.861		
	Perception	-.156	.369		-.075	-.424	.675	.999	1.001
	Expectation	1.296	.573		.397	2.260	.032	.999	1.001
a. Dependent Variable: Literacy value									

Based on the SPSS output in the table above, the following multiple linear regression equation can be formulated: Y = -5.474 - 0.156(X1) + 1.298(X2)
Where:

Y = Literacy Value
X1 = Perceived Reality Score
X2 = Expectation Score"

V. DISCUSSION AND CONCLUSION

The main findings of this study present an interesting and theoretically significant paradox. On the one hand, a partial regression analysis (t-test) showed that students' perception of the quality of services they received (the 'reality' variable) did not have a statistically significant influence on their literacy achievement, as evidenced by a significance value of $p = 0.675$, well above the $\alpha = 0.05$ threshold.In contrast, the 'expectations' variable emerged as a positive and statistically significant predictor, with a t-statistic of 2.260, which exceeded the t-table value (2.052), and a significance value of $p = 0.032$ ($p < 0.05$).This paradox is deepened by the SERVQUAL analysis findings, which identified an overall negative gap (-0.175) between expectations and reality, indicating that the services received did not meet students' expectations.This raises a key question: why are students' literacy achievements more driven by their internal expectations, even when they perceive the external services provided as suboptimal?The answer to this question can be analyzed in depth through the lens of Expectancy-Value Theory (EVT). According to EVT, a person's choice, persistence, and performance are functions of two main psychological components: expectancy of success and the subjective task value attached to the task [6].

In the context of this study, the insignificant influence of the 'reality' variable ($p = 0.675$) implies that the current condition of external services is not the main driver of literacy achievement. Conversely, the strong significance of the 'expectation' variable ($p = 0.032$) suggests that students' internal psychological factors—namely, their belief in the importance of education (the value aspect) and their expectations for success (the Expectancy aspect)—are much stronger predictors. In other words, when a student internally believes "I can do this" (expectancy) and "I want to do this" (value), this internal drive becomes a more dominant force than their perception of the quality of facilities or the services provided by teachers [20].

These findings are particularly relevant when placed in dialogue with the wider literature. Research on university students by [21]found that students' perceptions of the learning environment, including teaching quality, significantly affect their learning outcomes. Our contrasting results may indicate developmental differences; at the primary education level, internal psychological factors such as aspirations and self-efficacy may play a more fundamental role in shaping academic achievement than perceptions of external service quality. This is in line with various studies within the EVT framework that have consistently shown that success expectations often emerge as stronger predictors of achievement than other motivational components[22].

However, the insignificance of the influence of perceived service quality on academic achievement also resonates with the findings of [10], who found that not all dimensions of service quality (in their study, the tangible dimension) contribute to academic achievement.This suggests that the relationship between service quality and learning outcomes is not simple and linear but rather complex and likely moderated by other factors, including student developmental levels and educational context.The F-test result in this study, which showed that the overall model was not statistically significant ($F = 2.674$, $p = 0.087$), further strengthens this hypothesis. Although the combined model was not significant, the predictive power of the 'expectation' variable alone remained prominent, explaining 16.5% of the variance in literacy scores ($R^2 = 0.165$).

The results of this study have important practical implications.Educational policies and practices aimed at improving literacy should not focus solely on enhancing infrastructure or services (i.e., external factors). An equally important, or perhaps more crucial, intervention involves programs designed to build students' aspirations, self-efficacy, and intrinsic motivation (internal factors). Educators and policymakers should consider strategies that reinforce students' confidence in their ability to succeed and instill the value of education.

This study has some limitations that should be acknowledged. The small sample size (N=30) limits the generalizability of these findings to a wider population. In addition, the cross-sectional design used can only identify associations between variables at a single point in time and precludes drawing causal conclusions.Future research could address these limitations by employing larger samples and longitudinal designs to track how changes in service expectations and perceptions affect literacy achievements over time.

In conclusion, this study makes a unique contribution by highlighting the central role of students' internal motivation, as reflected in their expectations, as a significant predictor of literacy achievement in primary school. These findings suggest that even when perceived service quality is suboptimal, as demonstrated by a negative SERVQUAL gap score, students' aspirations and belief in the value of education can be key

drivers of their academic success. This underscores the importance of a holistic approach to educational interventions that not only improve external conditions but also actively nurture and strengthen students' internal motivation and self-beliefs.

REFERENCES

[1] C. H. Tseng, C. H. Hsu, J. W. Liu, and C. T. Wang, "The impact of online teaching in behavior intention for college students in Taiwan," *Front Psychol*, vol. 13, no. August, pp. 1–12, 2022, doi: 10.3389/fpsyg.2022.911262.

[2] OECD, *The Assessment Frameworks for Cycle 2 of the Programme for the International Assessment of Adult Competencies*. paris: OECD Publishing, 2021. [Online]. Available: https://doi.org/10.1787/23078731%0Ahttps://www.oecd-ilibrary.org/deliver/b1c0b194-en.pdf?itemId=%2Fcontent%2Fpublication%2Fb1c0b194-en&mimeType=pdf

[3] C. Qiao, Y. Chen, Q. Guo, and Y. Yu, "Understanding science data literacy: a conceptual framework and assessment tool for college students majoring in STEM," *Int J STEM Educ*, vol. 11, no. 1, 2024, doi: 10.1186/s40594-024-00484-5.

[4] N. A. Bakar, M. S. Alsmadi, Z. Ali, A. Shuaibu, and M. H. Solahudin, "Influence of Students' Motivation on Academic Achievement Among Undergraduate Students in Malaysia," vol. 6, no. 2, pp. 3443–3450, Apr. 2022, [Online]. Available: http://journalppw.com

[5] R. F. Hapsari, Y. Efendi, D. N. Inayati, D. K. Wulansari, and I. Irdiyansyah, "Development of SERVQUAL Service Quality Measurement Instrumen in Primary School," *Pedagogia: Jurnal Ilmiah Pendidikan*, vol. 17, no. 1, pp. 53–68, Jul. 2025, doi: 10.55215/pedagogia.v17i1.43.

[6] J. S. Eccles and A. Wigfield, "From expectancy-value theory to situated expectancy-value theory: A developmental, social cognitive, and sociocultural perspective on motivation," *Contemp Educ Psychol*, vol. 61, Apr. 2020, doi: 10.1016/j.cedpsych.2020.101859.

[7] R. P. Bartolo and H. Tınmaz, "Service quality in higher education: A literature review," *Journal for the Education of Gifted Young Scientists*, vol. 12, no. 3, pp. 119–135, Sep. 2024, doi: 10.17478/jegys.1518891.

[8] R. Baniya, "Relationship Between Perception of Service Quality and Students' Satisfaction – A Case Study of a Management School," *Journal of Education and Research*, vol. 6, no. 2, pp. 43–64, Jan. 2019, doi: 10.3126/jer.v6i2.22149.

[9] T. Chandra, M. Ng, S. Chandra, and Priyono, "The effect of service quality on student satisfaction and student loyalty: An empirical study," *Journal of Social Studies Education Research*, vol. 9, no. 3, pp. 109–131, 2018, doi: 10.17499/jsser.12590.

[10] M. B. Peña-Lang, J. M. Barrutia, and C. Echebarria, "Service quality and students' academic achievement," *Quality Assurance in Education*, vol. 31, no. 2, pp. 247–262, Aug. 2022, doi: 10.1108/QAE-02-2022-0039.

[11] R. F. Hapsari, Y. Efendi, D. N. Inayati, D. K. Wulansari, and I. Irdiyansyah, "Development of SERVQUAL Service Quality Measurement Instrumen in Primary School," *Pedagogia: Jurnal Ilmiah Pendidikan*, vol. 17, no. 1, pp. 53–68, Jul. 2025, doi: 10.55215/pedagogia.v17i1.43.

[12] A. Z. Valari, P. A, and L. Leonard, *Delivering Quality Service: Balancing Customer Perceptions and Expectations*. New York America: the free press a division of simon & Schuster, 1990.

[13] R. Walpole, R. Myers, and K. Y. Myers, *Essentials of Probability and Statistics for Engineering and Scientists*, First Edit., vol. 17. United States of America: Pearson Education Limited, 2014.

[14] A. L. Burton, "The OLS Linear Regression Framework The Least Squares Method OLS (Linear) Regression," 2021.

[15] A. Soesana *et al.*, *Quantitative Research Methodology*. our foundation writes, 2023. [Online]. Available: kitamenulis.id

[16] Y. Wu *et al.*, "Development of a short version of the perceived social support scale: based on classical test theory and ant colony optimization," *BMC Public Health*, vol. 25, no. 1, 2025, doi: 10.1186/s12889-025-21399-y.

[17] J. F. Hair jr, W. C. Black, B. J. Babin, R. E. Anderson, W. C. Black, and R. E. Anderson, *MULTIVARIATE DATA ANALYSIS Multivariate Data Analysis*, 8th ed. United kingdom: Cengage Learning EMEA, 2019.

[18] F. Habibzadeh, "Data Distribution: Normal or Abnormal?," *J Korean Med Sci*, vol. 39, no. 3, pp. 1–8, 2024, doi: 10.3346/jkms.2024.39.e35.

[19] I. Ghozali, *Multivariate Analysis Application with IBM SPSS19 Program*, 5th ed. Semarang: University of Diponegoro Publishing Agency, 2011.

[20] A. Wigfield and J. S. Eccles, "Expectancy-value theory of achievement motivation," *Contemp Educ Psychol*, vol. 25, no. 1, pp. 68–81, 2000, doi: 10.1006/ceps.1999.1015.

[21] A. Lizzio, K. Wilson, and R. Simons, "University students' perceptions of the learning environment and academic outcomes: Implications for theory and practice," *Studies in Higher Education*, vol. 27, no. 1, pp. 27–52, Feb. 2002, doi: 10.1080/03075070120099359.

[22] J. Guo, H. W. Marsh, P. D. Parker, A. J. S. Morin, and T. Dicke, "Extending expectancy-value theory predictions of achievement and aspirations in science: Dimensional comparison processes and expectancy-by-value interactions," *Learn Instr*, vol. 49, pp. 81–91, Jun. 2017, doi: 10.1016/j.learninstruc.2016.12.007.