ANALYSIS OF THE CUSTOMER SATISFACTION INDEX METHOD ON THE PERCEPTION OF UNIVERSITAS PRIMA INDONESIA'S NEW BUILDING BY ITS STUDENTS

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ABSTRACT- *The rapid growth of private and higher education institutions has led to increased competition among faculties to meet their set quotas, resulting in uneven student distribution. Universities and faculties must consistently strive to improve quality in various areas to achieve their quotas. In measuring student satisfaction, a questionnaire was distributed to students. Out of the 369 questionnaires filled out, only 235 were deemed valid and analyzed. The analysis was conducted using two calculation methods: the Customer Satisfaction Index (IPA), which resulted in a 75.42% satisfaction rate, and the Importance Performance Analysis (IPA), which identified 10 indicators in quadrant 1. It can be said that both methods resulted in a fairly satisfactory service quality.*

Key Word: *Ensemble Learning, Data Science, Comparison, Feature Importance, Diabetes*

1. INTRODUCTION

Higher education is the highest level in the national education system, serving as a crucial foundation for a nation's growth. The key to advancing a nation lies within its higher education institutions[1][2]. These institutions must become more effective and competitive in a global market where societal expectations are increasing[3].

The surge in private universities and the rapid development of higher education institutions have increased competition among faculties to meet their set quotas[4], resulting in uneven student distribution. Universities and faculties must continually and consistently enhance their quality in various areas to meet these quotas[5].

One private university in Medan, Universitas Prima Indonesia (UNPRI), admits many students each academic year. Given its large student body, Universitas Prima Indonesia must continually improve the quality of its services to avoid student disappointment. Universitas Prima Indonesia was founded by Dr. I. Nyoman Ehrich Lister, M.Kes, AIFM (Lie Eng Kun). The university's roots can be traced back to the Prima Nursing Academy and the Prima Midwifery Academy in Medan, established in 2001. It developed into the Prima Husada Medan Health Science College in 2002 and expanded into Universitas Prima Indonesia in 2005[6].

Currently, UNPRI is continually enhancing its service quality, particularly in infrastructure. One step taken has been the construction of a new building. With this new building, it is hoped that UNPRI Medan can meet student service satisfaction. Therefore, it is necessary to evaluate student satisfaction to determine whether the new UNPRI building has met the expectations or satisfaction of UNPRI Medan students.

A questionnaire was distributed to the students to measure student service satisfaction[7]. Out of the 369 questionnaires filled out, only 235 were deemed valid and analyzed. The analysis was conducted using two calculation methods: the Customer Satisfaction Index (IPA), which resulted in a 75.42% satisfaction rate, and the Importance Performance Analysis

(IPA), which identified 10 indicators in quadrant 1. It can be inferred that both methods showed satisfactory service quality.

Therefore, the forthcoming research, titled "Analysis of the Customer Satisfaction Index Method on the Perception of Universitas Prima Indonesia's New Building by its Students," aims to evaluate student satisfaction with the new Universitas Prima Indonesia building.

2. METHODOLOGY

This research uses the Customer Satisfaction Index (CSI) approach with quantitative data collection. Systematic scientific examination of parts, phenomena, and cause-effect relationships is known as quantitative research[8]. Quantitative research aims to develop and apply mathematical models, theories, and hypotheses about natural phenomena[9]. Since it establishes fundamental relationships between empirical observations and mathematical expressions of quantitative relationships, the measurement process is a critical component of quantitative research[10].

The main dimensions used to measure the quality of Universitas Prima Indonesia's services include tangible evidence or physical manifestation, empathy or care, reliability, assurance, and responsiveness[11]. By applying value criteria, the Customer Satisfaction Index (CSI) analysis is used to determine the overall satisfaction level[12].

The Customer Satisfaction Index (CSI) is calculated using the following stages:

1. The value obtained from the average importance of each consumer/student is called the Mean Importance Score (MIS).
2. The percentage value of the MIS per attribute relative to the total MSI of all attributes is called the Weight Factor (WF).
3. The multiplication of the Weight Factor with the average satisfaction level (X) is called the Weight Score (WS).
4. Determining the Customer Satisfaction Index (CSI).
5. The Likert scale is used as a measuring tool in this study. The self-reporting method for measuring sentiment, known as the Likert scale, asks individuals to rate how much they agree or disagree with each statement [Citation].
6. Expectation and reality evaluations are the two research criteria used to develop this scale. Below are the criteria for answering questions about customer service expectations and reality:
    a. Weight 3 = Very Satisfied (SP)
    b. b) Weight 2 = Satisfied (P)
    c. c) Weight 1 = Very Unhappy (STP)

Table 1 CSI Value Criteria

Value CSI	Criteria
0.71 – 1.00	Very Satisfied
0.35 – 0.70	Satisfied
0.00 – 0.34	Very Unhappy

2.2. Python

Python is a popular programming language for machine learning, data research, and online applications (ML)[13]. Developers use Python because it is efficient, easy to learn, and compatible with various platforms. Python software is user-friendly, compatible with many platforms, and accelerates development.

Here are some advantages of the Python programming language[13]:

1. Python scripts are easily read and understood by developers because they contain core syntax similar to English.

2. Python boosts developer productivity as it requires fewer lines of code to create applications compared to other programming languages.
3. Python provides a large standard library of reusable code for nearly every task. Developers don't have to start from scratch when writing code.
4. Python integrates well with other popular programming languages, including Java, C, and C++.
5. The dynamic Python community supports millions of developers worldwide. You can quickly get help from the community if you encounter a problem.
6. Python can run on many different computer operating systems, including Windows, macOS, Linux, and Unix.

2.3. Research Flow

The researcher has created a research flow to assist the researcher in completing this research within the given timeframe. The research flow can be seen in Figure 2.1 below:

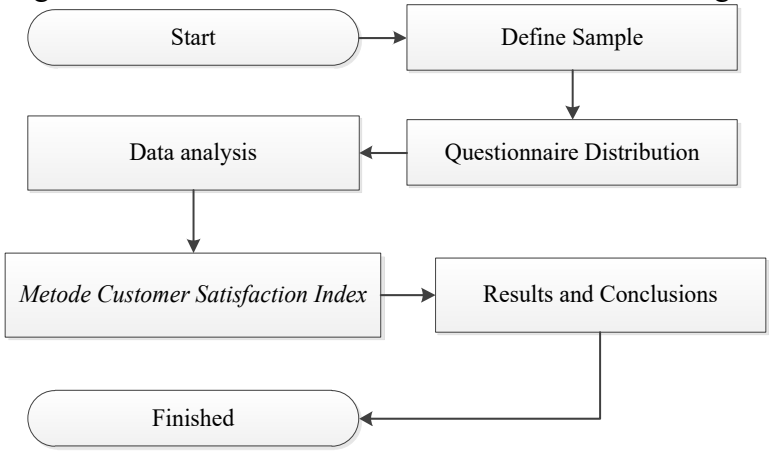

Figure 1 Research Flowchart

1. Literature Study
   Literature study is one method to solve problems by exploring previous writings. In other words, the term Literature Study is also closely related to the term literature review[14].
2. Determining Sample
   At this stage, the researcher determines the sample questions to be used to analyze student satisfaction.
3. Distribution of Questionnaire
   At this stage, the questionnaire is distributed to the Information System Study Program students at Universitas Prima Indonesia from the 1st semester to the 8th semester.
4. Data Analysis
   After the questionnaire distribution, the next stage is data analysis based on the questionnaire responses. The researcher uses the Python programming language and Google Colab application for data analysis.
5. Customer Satisfaction Index Method
   This stage involves processing the data from the completed data analysis using the Customer Satisfaction Index (CSI) method.
6. Results and Conclusions
   At this stage, the final results are obtained on whether or not the services provided by Universitas Prima Indonesia to its students are good.

3. RESULT AND DISCUSSION

3.1. Problem Analysis

There is a need for a satisfaction survey to ascertain student satisfaction with services in the field of infrastructure, which includes classrooms, parking lots, and bathrooms. Universitas Prima Indonesia aims to improve the quality of services provided to its students.

3.2. Data Processing Flow

To facilitate data management, the author has created a data processing flow. The established data processing flow is as follows:

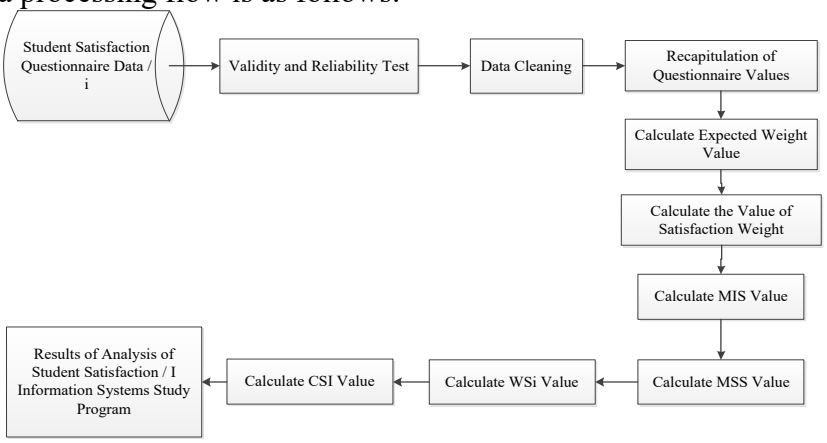

Figure 2 Data Processing Flow

3.2.1 Student Questionnaire Data

The questionnaire for this research was distributed to the students of the Information System study program at Universitas Prima Indonesia via Google Forms. The questionnaire consisted of 20 questions for Performance Assessment and 20 questions for Importance Measurement, and 308 responses were received.

3.2.2 Data Validity and Reliability Test

1. Validity Test

The indicators of the total score variable are correlated with the scores of each indicator to achieve a validity test, and the findings from this correlation are then compared with the critical value at a significance level of 0.05.

An instrument is considered valid if it can measure the target value and distinguish between high and low values. The instrument's validity demonstrates the extent to which the obtained data deviates from the depiction of the relevant variable. A validity test aims to assess the level of validity of the questionnaire instrument used to collect data[15].

Before the questionnaire was distributed, a validity test sample was conducted on 20 satisfaction questions and 20 expectation questions with 30 respondents. The validity test values obtained can be seen in Figures 3 and 4 below:

```
corr_matrix = dfrv.corr()
corr_matrix['Total']
```

```
Q1       0.772830
Q2       0.753236
Q3       0.765343
Q4       0.648714
Q5       0.518056
Q6       0.833158
Q7       0.652884
Q8       0.419702
Q9       0.925389
Q10      0.581647
Q11      0.759996
Q12      0.694444
Q13      0.681164
Q14      0.540268
Q15      0.608132
Q16      0.682995
Q17      0.792212
Q18      0.677292
Q19      0.800410
Q20      0.602642
Total    1.000000
Name: Total, dtype: float64
```

Figure 3 Satisfaction Validity

```
corr_matrix = dfrv2.corr()
corr_matrix['Total']
```

```
Q1       0.652419
Q2       0.736804
Q3       0.800858
Q4       0.693276
Q5       0.782796
Q6       0.736074
Q7       0.722190
Q8       0.820538
Q9       0.703074
Q10      0.859498
Q11      0.663519
Q12      0.830800
Q13      0.729332
Q14      0.827983
Q15      0.728259
Q16      0.845867
Q17      0.787151
Q18      0.714081
Q19      0.752062
Q20      0.826960
```

Figure 4 Test the Validity of Expectations

The validity test for specific items obtained a degree of freedom (df) value of N - 2 = 30 - 2 = 28. With a significance level of 0.05, the table value r is 0.374. The tests' results found that the computed r value is greater than 0.374. Therefore it can be concluded that the data validation test is fulfilled.

2. Reliability Test

The reliability test aims to ensure that the internal measurement tool consistently produces accurate data when used repeatedly and under various conditions. An instrument is considered reliable for the Cronbach's Alpha reliability test if its reliability coefficient, or alpha, is 0.6 or higher[16].

```
def cronbach_alpha(dfrv):
    dfrv_corr = dfrv.corr()
    N = dfrv.shape[1]
    rs = np.array([])
    for i, col in enumerate(dfrv_corr.columns):
        sum_ = dfrv_corr[col][i+1:].values
        rs = np.append(sum_, rs)
    mean_r = np.mean(rs)
    cronbach_alpha = (N * mean_r) / (1 + (N - 1) * mean_r)
    return cronbach_alpha
print('Nilai Cronbach Alpha :',cronbach_alpha(dfrv))
```

```
Nilai Cronbach Alpha : 0.9472195302593284
```

Figure 5 Satisfaction Reliability Test

```
def cronbach_alpha(dfrv2):
    dfrv2_corr = dfrv2.corr()
    N = dfrv2.shape[1]
    rs = np.array([])
    for i, col in enumerate(dfrv2_corr.columns):
        sum_ = dfrv2_corr[col][i+1:].values
        rs = np.append(sum_, rs)
    mean_r = np.mean(rs)
    cronbach_alpha = (N * mean_r) / (1 + (N - 1) * mean_r)
    return cronbach_alpha
print('Nilai Cronbach Alpha :',cronbach_alpha(dfrv2))
```

```
Nilai Cronbach Alpha : 0.9433229446593707
```

Figure 6 Expectation Reliability Test

Testing is reliable if the Cronbach's Alpha value is > 0.60. From the testing conducted, a value of 0.947 was obtained for the satisfaction questionnaire and a value of 0.943 for the expectation questionnaire. Since both values are greater than 0.60, it can be concluded that the questionnaire is reliable.

3.2.3 Data Cleaning

1. Deleting Columns

After obtaining data from the respondents, the next step is data cleaning, where unnecessary fields in the data, such as Timestamp, NIM (student number), NAMA (name), Gender, Email, Mobile Number, and Semester, are deleted. This column deletion process is performed using Python source code, as seen in Figure 5.

```
df.drop(columns=['Timestamp','NIM','NAMA','Jenis Kelamin','Email','Nomor Handphone','Semester'], inplace=True)
df.head()
```

	Ruangan kelas di Universitas Prima Indonesia memiliki fasilitas yang lengkap, bersih, dan nyaman?	Lahan parkir yang sediakan oleh Universitas Prima Indonesia luas, mudah diakses, dan aman?	Ruangan komputer di Universitas Prima Indonesia memiliki fasilitas yang lengkap, bersih, dan nyaman?	Toilet di Universitas Prima Indonesia bersih, wangi, dan nyaman?	Ketersediaan informasi tentang nama ruangan kelas pada universitas prima indonesia	Ketersediaan informasi tentang lahan parkir pada Universitas Prima Indonesia	Ketersediaan informasi tentang ruangan komputer pada Universitas Prima Indonesia	Ketersediaan informasi tentang penggunaan Toilet pada Universitas Prima Indonesia
0	2	3	3	3	2	2	3	2
1	3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2	2
3	3	3	3	1	3	3	3	3
4	3	3	3	3	3	2	2	2

Figure 5 Data After Cleaning

2. Rename Column

To facilitate data processing, the researcher renames long question columns, changing them to the initial 'Q', which stands for 'question.' The process of renaming columns in the data can be seen in the following figure 6:

```
df.rename(columns=
          {'Ruangan kelas di Universitas Prima Indonesia memiliki fasilitas yang lengkap, bersih, dan nyaman?  ':'Q1',
                'Lahan parkir yang sediakan oleh Universitas Prima Indonesia luas, mudah diakses, dan aman?':'Q2',
                'Ruangan komputer di Universitas Prima Indonesia memiliki fasilitas yang lengkap, bersih, dan nyaman?  ':'Q3',
                'Toilet di Universitas Prima Indonesia bersih, wangi, dan nyaman?  ':'Q4',
                'Ketersediaan informasi tentang nama ruangan kelas pada universitas prima indonesia':'Q5',
                'Ketersediaan informasi tentang lahan parkir pada Universitas Prima Indonesia':'Q6',
                'Ketersediaan informasi tentang ruangan komputer pada Universitas Prima Indonesia':'Q7',
                'Ketersediaan informasi tentang penggunaan Toilet pada Universitas Prima Indonesia':'Q8',
                'Admin tanggap dalam memberikan informasi tentang ketersediaan ruangan kelas pada Universitas Prima Indonesia':'Q9',
                'Satpam tanggap dalam memberikan informasi tentang ketersediaan lahan parkir pada Universitas Prima Indonesia':'Q10',
                'Asisten Lab tanggap dalam memberikan informasi tentang ketersediaan ruangan komputer pada Universitas Prima Indonesia':'Q11',
                'Cleaning Service(CS) tanggap dalam memberikan informasi tentang ketersediaan Toilet pada Universitas Prima Indonesia':'Q12',
                'Ruangan kelas pada Universitas Prima Indonesia memadai daya tampung Mahasiswa/I Universitas Prima Indonesia?':'Q13',
                'Lahan Parkir pada Universitas Prima Indonesia memadai daya tampung Mahasiswa/I Universitas Prima Indonesia?':'Q14',
                'Ruangan komputer pada Universitas Prima Indonesia memadai daya tampung Mahasiswa/I Universitas Prima Indonesia?':'Q15',
                'Toilet pada Universitas Prima Indonesia memadai daya tampung Mahasiswa/I Universitas Prima Indonesia?':'Q16',
                'Admin mengarahkan Mahasiswa/I dalam menemukan ruangan kelas ketika perkuliahan.':'Q17',
                'Satpam mengarahkan Mahasiswa/I dalam menemukan lahan parkiran yang kosong.':'Q18',
                'Asisten Lab mengarahkan Mahasiswa/I dalam menemukan ruangan lab saat perkuliahan.':'Q19',
                'Cleaning Service(CS) membantu mengarahkan Mahasiswa/I dalam menemukan Toiltet terdekat.':'Q20'},inplace=True)
df.head()
```

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	3	3	3	2	2	3	2	2	2	2	1	3	3	3	3	2	1	1	1
3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	2	2	2	3
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	1	3	3	3	3	3	3	3	1	3	3	3	1	3	3	3	3
3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2

Figure 6 Rename Column

3.2.4 Questionnaire Score Recapitulation

After distributing the questionnaire, the recapitulation of the answers from 308 respondents was obtained. Figure 7 presents the recapitulation of expectation ratings, and Figure 3.8 displays the satisfaction measurement. The recapitulation of respondent answers is as follows:

```
df1 = pd.read_excel('/content/drive/MyDrive/Dataset/Gedung/Total/Kepuasan.xlsx', sheet_name='Sheet2')
df1.head(20)
```

index	Pertanyaan	Sangat Setuju	Setuju	Sangat Tidak Setuju
0	Q1	179	118	10
1	Q2	174	126	7
2	Q3	194	110	3
3	Q4	178	126	3
4	Q5	174	130	3
5	Q6	164	143	0
6	Q7	205	98	4
7	Q8	167	140	0
8	Q9	216	91	0
9	Q10	161	143	3
10	Q11	192	108	7
11	Q12	136	168	3
12	Q13	201	106	0
13	Q14	162	141	4
14	Q15	217	90	0
15	Q16	182	125	0
16	Q17	170	137	0
17	Q18	157	143	7
18	Q19	168	131	8
19	Q20	159	141	7

Figure 7 Satisfaction Summary

```
df12 = pd.read_excel('/content/drive/MyDrive/Dataset/Gedung/Total/Harapan.xlsx',sheet_name='Sheet2')
df12.head(20)
```

index	Pertanyaan	Sangat Setuju	Setuju	Sangat Tidak Setuju
0	Q1	237	64	6
1	Q2	142	158	7
2	Q3	237	67	3
3	Q4	127	173	7
4	Q5	199	108	0
5	Q6	120	180	7
6	Q7	193	114	0
7	Q8	163	138	6
8	Q9	177	124	6
9	Q10	183	124	0
10	Q11	148	150	9
11	Q12	157	139	11
12	Q13	165	142	0
13	Q14	171	129	7
14	Q15	171	136	0
15	Q16	168	135	4
16	Q17	151	146	10
17	Q18	173	121	13
18	Q19	171	132	4
19	Q20	171	129	7

Figure 8 Expectations Recapitulation

3.2.5 Calculating Expectation Weight Values

To find the expectation weight values, equation 1 is needed, and its calculation is performed for each attribute. Equation 1 to find the expectation weight values is as follows:

$$\sum yi = (\sum(STS \times 1)) + (\sum(S \times 2)) + (\sum(SS \times 3)) \ldots\ldots\ldots\ldots\ldots(1)$$

Where:
∑yi = Sum of the weight of the expectation statement responses for attribute i
∑STS = Sum of respondents choosing the 'strongly disagree' option
∑S = Sum of respondents choosing the 'agree' option
∑SS = Sum of respondents choosing the 'strongly agree' option
1, 2, 3 = Likert Scale Scores

```
dfp2 = pd.read_excel('/content/drive/MyDrive/Dataset/Gedung/Total/Harapan.xlsx',sheet_name='Sheet3')
dfp2.head(20)
```

index	Pertanyaan	Sangat Setuju	Setuju	Sangat Tidak Setuju	Total
0	Q1	711	128	6	845
1	Q2	426	316	7	749
2	Q3	711	134	3	848
3	Q4	381	346	7	734
4	Q5	597	216	0	813
5	Q6	360	360	7	727
6	Q7	579	228	0	807
7	Q8	489	276	6	771
8	Q9	531	248	6	785
9	Q10	549	248	0	797
10	Q11	444	300	9	753
11	Q12	471	278	11	760
12	Q13	495	284	0	779
13	Q14	513	258	7	778
14	Q15	513	272	0	785
15	Q16	504	270	4	778
16	Q17	453	292	10	755
17	Q18	519	242	13	774
18	Q19	513	264	4	781
19	Q20	513	258	7	778

Figure 9 Expected Weight Value (Y)

3.2.6 Calculating Satisfaction Weight Values

To find the satisfaction weight values, equation 1 is needed, and its calculation is performed for each attribute. Equation 1 to find the satisfaction weight values is as follows:

$$\sum Xi = (\sum(STS \times 1)) + (\sum(S \times 2)) + (\sum(SS \times 3)) \ldots\ldots\ldots\ldots\ldots(2)$$

Where:
∑Xi = Sum of the weight of the satisfaction statement responses for attribute i
∑STS = Sum of respondents choosing the 'strongly disagree' option
∑S = Sum of respondents choosing the 'agree' option
∑SS = Sum of respondents choosing the 'strongly agree' option
1, 2, 3 = Likert Scale Scores

index	Pertanyaan	Sangat Setuju	Setuju	Sangat Tidak Setuju	Total
0	Q1	537	236	10	783
1	Q2	522	252	7	781
2	Q3	582	220	3	805
3	Q4	534	252	3	789
4	Q5	522	260	3	785
5	Q6	492	286	0	778
6	Q7	615	196	4	815
7	Q8	501	280	0	781
8	Q9	648	182	0	830
9	Q10	483	286	3	772
10	Q11	576	216	7	799
11	Q12	408	336	3	747
12	Q13	603	212	0	815
13	Q14	486	282	4	772
14	Q15	651	180	0	831
15	Q16	546	250	0	796
16	Q17	510	274	0	784
17	Q18	471	286	7	764
18	Q19	504	262	8	774
19	Q20	477	282	7	766

Figure 10 Satisfaction Weight Value (X)

3.2.7 Calculating Mean Importance Score (MIS)

MIS is the average level of respondent expectation for each attribute, which can be calculated using the following equation:

$$MIS = \frac{\sum_{i=1}^{n} Yi}{n} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3)$$

Where:
Yi = Response value for expectation question i
N = Number of respondents

Using equation 2, the MIS value is found by dividing the value of Yi per attribute by the Number of respondents. For question Q1, the value of Y = 783/307 = 2.55. The MIS values for questions Q2 to Q20 can be seen in the following table 2:

Table 2 Value of Mean Importance Score(MIS)

Pertanyaan	Nilai Jawaban Responden	Jumlah Responden	Nilai MIS
Q1	783	307	2,55

Q2	781	307	2,54
Q3	805	307	2,62
Q4	789	307	2,57
Q5	785	307	2,55
Q6	778	307	2,53
Q7	815	307	2,65
Q8	781	307	2,54
Q9	830	307	2,70
Q10	772	307	2,51
Q11	799	307	2,60
Q12	747	307	2,43
Q13	815	307	2,65
Q14	772	307	2,51
Q15	831	307	2,70
Q16	796	307	2,59
Q17	784	307	2,55
Q18	764	307	2,48
Q19	774	307	2,52
Q20	766	307	2,49
TOTAL			51,28

3.2.8. Calculating Mean Satisfaction Score (MSS)

MSS is the average level of respondent satisfaction for each attribute, which can be calculated using the following equation:

$$MIS = \frac{\sum_{i=2}^{n} Xi}{n} \quad \text{.....(4)}$$

Where:
Xi = Response value for satisfaction question i
N = Number of respondents

Using equation 3, the MSS value is found by dividing the value of Xi per attribute by the Number of respondents. For question Q1, the value of Y = 845/307 = 2.75. The MSS values for questions Q2 to Q20 can be seen in the following table 2:

Table 3 Mean Satisfaction Score (MSS)

Pertanyaan	Nilai Jawaban Responden	Jumlah Responden	Nilai MIS
Q1	845	307	2,75
Q2	749	307	2,43
Q3	848	307	2,76
Q4	734	307	2,39
Q5	813	307	2,64
Q6	727	307	2,36
Q7	807	307	2,62
Q8	771	307	2,51
Q9	785	307	2,55

Q10	797	307	2,59
Q11	753	307	2,45
Q12	760	307	2,47
Q13	779	307	2,53
Q14	778	307	2,53
Q15	785	307	2,55
Q16	778	307	2,53
Q17	755	307	2,45
Q18	774	307	2,52
Q19	781	307	2,54
Q20	778	307	2,53
TOTAL			50,70

3.2.9. Calculating Weight Factor (WF)

The Weight Factor is the value of MIS per attribute relative to the total for all MIS attributes. WF can be obtained through the following equation 5:

$$WF = \frac{MISi}{\sum_{i=2}^{p} MISi} \quad \text{.....(5)}$$

Using equation 4, the WF value is obtained by dividing the MIS value per attribute by the total MIS value. For question Q1, the WF value = 2.55 / 51.28 = 0.04. The WF values for questions Q2 to Q20 can be seen in the following Table 4:

Table 4 Weight Factor (WFi) Value

Pertanyaan	Nilai MIS	Total Nilai MIS	Nilai WFi
Q1	2,55	51,28	0,049
Q2	2,54	51,28	0,049
Q3	2,62	51,28	0,051
Q4	2,57	51,28	0,050
Q5	2,55	51,28	0,049
Q6	2,53	51,28	0,049
Q7	2,65	51,28	0,051
Q8	2,54	51,28	0,049
Q9	2,70	51,28	0,052
Q10	2,51	51,28	0,048
Q11	2,60	51,28	0,050
Q12	2,43	51,28	0,047
Q13	2,65	51,28	0,051
Q14	2,51	51,28	0,048
Q15	2,70	51,28	0,052
Q16	2,59	51,28	0,050
Q17	2,55	51,28	0,049
Q18	2,48	51,28	0,048
Q19	2,52	51,28	0,049
Q20	2,49	51,28	0,048

The Weight Score is the product of the WF value and the average level of satisfaction students perceive, known as the Mean Satisfaction Score (MSS). For example, for question Q1,

$$WSi = WFi \times MSSi \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (5)$$

Using equation 5, the WS value is obtained by multiplying the WF value with the MSS value for i. For question Q1, the value is 0.049 multiplied by 2.75, so the WS for Q1 is 0.135. The WS values for questions Q2 to Q20 can be seen in the following table 5:

Table 5 Weight Score (Wsi)

Pertanyaan	Nilai WFi	Nilai MSSi	Nilai WSi
Q1	0,049	2,75	0,135
Q2	0,049	2,43	0,119
Q3	0,051	2,76	0,141
Q4	0,050	2,39	0,120
Q5	0,049	2,64	0,129
Q6	0,049	2,36	0,116
Q7	0,051	2,62	0,134
Q8	0,049	2,51	0,123
Q9	0,052	2,55	0,133
Q10	0,048	2,59	0,124
Q11	0,050	2,45	0,123
Q12	0,047	2,47	0,116
Q13	0,051	2,53	0,129
Q14	0,048	2,53	0,121
Q15	0,052	2,55	0,133
Q16	0,050	2,53	0,127
Q17	0,049	2,45	0,120
Q18	0,048	2,52	0,121
Q19	0,049	2,54	0,124
Q20	0,048	2,53	0,121
Total			2,508

3.2.11. Determining CSI Value

To find the Customer Satisfaction Index value, the following equation is used:

$$CSI = \frac{\sum_{i=2}^{n} WSi}{HS} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (6)$$

HS = The maximum scale used (High Scale)

The CSI value is calculated using equation 6, which is the total weight score divided by the maximum value of the Likert scale, which is 2.508 divided by 3, then multiplied by 100. So, the resulting CSI value obtained is 0.83%.

4. CONCLUSION

Several conclusions can be drawn based on the results and discussions in this study, as follows:

The satisfaction level of the students of the Information Systems Study Program at Prima Indonesia University towards the new building is 83%. Thus it can be concluded that the students are very satisfied with the new building.

The CSI method is quite good in analyzing student satisfaction because, in this method, the expectation value becomes the benchmark in assessing student satisfaction, making the final calculation value accurate.

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