

CHAPTER IV

RESEARCH FINDINGS, DISCUSSION, AND IMPLICATIONS

4.1. Research Description

Descriptive analysis is applied to map the research respondents' characteristics as identified in the questionnaire forms. The characteristics identified are gender, age, education, occupation, and income.

4.1.1. Characteristics on Gender

From the Table 4.1 below, the proportion of gender can be presented as follows:

Table 4.1:
Respondents' Characteristics Based on Gender

Gender	Frequency	Percentage
Male	76	76%
Female	24	24%
Total	100	100%

Source: Primary data

Table 4.1 shows that 76% of respondents or 76 patients of PKU Muhammadiyah Hospital are male, and 24% or 24 patients are female. There are more male than female because most men do not really concern of their own health as most women do, so that men are easily sick than women.

4.1.2. Characteristics on Age

The researcher classified the respondents into 8 age ranges. From the Table 4.2 below, the proportion of age ranges can be presented as follows:

Table 4.2:
Respondents' Characteristics Based on Age

Age Ranges	Frequency	Percentage
25 years old and under	13	13%
26 – 30 years old	6	6%
31 – 35 tears old	26	26%
36 – 40 years old	22	22%
41 – 45 years old	4	4%
46 – 50 years old	7	7%
51 – 55 years old	18	18%
56 years old and above	4	4%
Total	100	100%

Source: Primary data

Table 4.2 shows that the majority of patients of PKU Muhammadiyah Hospital are in the age range of 31 – 35 years old (26 patients or 26%). It is enabled because of this age range is categorized in productive age. Less awareness of self-health quality that appeared by hard workings attitude makes them easily sick.

4.1.3. Characteristics on Education

Based on the respondents' educational backgrounds, the researcher classified them into 5 groups. They were junior high school, high school, diploma, bachelor degree, and magisterial and doctoral degree. From the Table 4.3 below, the proportion of education backgrounds can be presented as follows:

Table 4.3:
Respondents' Characteristics Based on Education

Education Backgrounds	Frequency	Percentage
Junior High School	15	15%
High School	19	19%
Diploma	39	39%
Bachelor Degree	26	26%
Magisterial Degree and Doctoral Degree	1	1%
Total	100	100%

Source: Primary data

Table 4.3 shows that the majority of respondents' educational background is diploma (39 people or 39%). It is followed by bachelor degree (26 people or 26%); high school (19 people or 19%); junior high school (15 people or 15%); and magisterial and doctoral degree (1 person or 1%).

4.1.4. Characteristics on Occupation

The researcher classified respondents' occupations into 5 groups, which were civil servant, private, military, entrepreneur, and employee. From the Table 4.4 below, the proportion of occupations can be presented as follows:

Table 4.4:
Respondents' Characteristics Based on Occupation

Occupations	Frequency	Percentage
Civil Servant	12	12%
Private	28	28%
Military	15	15%
Entrepreneur	27	27%
Employee	18	18%
Total	100	100%

Source: Primary data

Table 4.4 shows that the majority of respondents' occupation is private (28 people or 28%). It is followed by entrepreneur (27 people or 27%); employee (18 people or 18%); military (15 people or 15%); and civil servant (12 people or 12%).

4.1.5. Characteristics on Income

Based on monthly income ranges, the researcher classified them into 5 groups. From the Table 4.5 below, the proportion of income ranges can be presented as follows:

Table 4.5:
Respondents' Characteristics Based on Income

Income Ranges (Rp.)	Frequency	Percentage
Under 500,000.	11	11%
500,000. – 750,000.	6	6%
750,000. – 1,000,000.	17	17%
1,000,000. – 1,500,000.	47	47%
Above 1,500,000.	19	19%
Total	100	100%

Source: Primary data

Table 4.5 shows that the majority of respondents' income range is Rp. 1,000,000. – Rp. 1,500,000. (47 people or 47%). It is followed by above Rp. 1,500,000. (19 people or 19%); Rp. 750,000. – Rp. 1,000,000. (17 people or 17%); under Rp. 500,000. (11 people or 11%); and Rp. 500,000. – Rp. 750,000. (6 people or 6%).

4.2. Research Findings

In this research study, the data processing is done through testing the hypothesis. This hypothesis test is intended to find out whether or not there

is significant relationship between the dependent variable (Y) and independent variables (X). Also, it is intended to find out whether or not *reliability* contributes most dominantly the customer satisfaction at PKU Muhammadiyah Hospital in Yogyakarta.

To fulfill this purpose, the thesis writer uses the statistical measurement, which is multiple linear regressions.

4.2.1. First Hypothesis

The first hypothesis stated that there is significant relationship between the dependent variable (customer satisfaction) and five independent variables (tangible, reliability, responsiveness, assurance, and empathy) at PKU Muhammadiyah Hospital in Yogyakarta.

- **Multiple Linear Regressions Analysis**

In this research thesis, the relationship between tangible (X_1), reliability (X_2), responsiveness (X_3), assurance (X_4), empathy (X_5) and customer satisfaction (Y) is formulated in this equation model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

Which:

α = Constant

β_1 = Regression coefficient of X_1 (tangible)

β_2 = Regression coefficient of X_2 (reliability)

β_3 = Regression coefficient of X_3 (responsiveness)

β_4 = Regression coefficient of X_4 (assurance)

β_5 = Regression coefficient of X_5 (empathy)

To analyze multiple linear regressions, the researcher applied SPSS version 10.00 for Windows. The result of the analysis is presented in Table 4.6 as follows:

Table 4.6:
Summary of Linear Regression Analysis

Variables	Coefficients (β)	t-count	Sig. t	Result Status
Constant	-0.71			Significant
Tangible (X_1)	0.174	4.594	0.000	Significant
Reliability (X_2)	0.316	5.781	0.000	Significant
Responsiveness (X_3)	0.204	3.440	0.001	Significant
Assurance (X_4)	0.159	2.781	0.007	Significant
Empathy (X_5)	0.176	3.979	0.000	Significant
Standard of error	= 0.131	F-count	= 117.855	
Adjusted R Square	= 0.855	Sig. F	= 0.000	
R Square	= 0.862	F-table	= 2.3113	
R	= 0.929	t-table	= 1.6612	

Source: Primary data

Based on the multiple linear regressions analysis result using SPSS version 10.00 for Windows, the equation model is obtained as follows:

$$Y = -0.071 + 0.174X_1 + 0.316X_2 + 0.204X_3 + 0.159X_4 + 0.176X_5$$

Multiple linear regressions is used to analyze the relationship between service quality dimensions and customer satisfaction toward the performance perceived by the patients from the current health care service provided by PKU Muhammadiyah Hospital in Yogyakarta. To analyze how significant the relationship between those variables, it is necessary to organize hypothetical tests.

- **Partially Hypothetical Test Analysis (T-test Analysis)**

To examine whether or not there is significant relationship between the dependent variable (customer satisfaction) and five independent variables (tangible, reliability, responsiveness, assurance, and empathy) partially, T-test analysis (regression coefficients analysis) is used.

A. The t-test for tangible (X_1) toward customer satisfaction (Y)

1. Formulation for H_0 and H_a

H_0 : Partially, there is no significant relationship between customer satisfaction (Y) and tangible (X_1).

Ha: Partially, there is significant relationship between customer satisfaction (Y) and tangible (X₁).

2. Testing criteria

Ho is rejected and Ha is accepted if $t_{count} > t_{table}$

Ho is accepted and Ha is rejected if $t_{count} < t_{table}$

3. Testing result

By applying 5% significance level, it is obtained that the score of t_{table} is 1.6612 (one side test), and the t_{count} is 4.594. Because the t_{count} is larger than t_{table} ($4.594 > 1.6612$), then Ho is rejected and Ha is accepted. It means that partially, there is significant relationship between customer satisfaction (Y) and tangible (X₁).

B. The t-test for reliability (X₂) toward customer satisfaction (Y)

1. Formulation for Ho and Ha

Ho: Partially, there is no significant relationship between customer satisfaction (Y) and reliability (X₂).

Ha: Partially, there is significant relationship between customer satisfaction (Y) and reliability (X₂).

2. Testing criteria

Ho is rejected and Ha is accepted if $t_{count} > t_{table}$

Ho is accepted and Ha is rejected if $t_{count} < t_{table}$

3. Testing result

By applying 5% significance level, it is obtained that the score of t_{table} is 1.6612 (one side test), and the t_{count} is 5.781. Because the t_{count} is larger than t_{table} ($5.781 > 1.6612$), then H_0 is rejected and H_a is accepted. It means that partially, there is significant relationship between customer satisfaction (Y) and reliability (X₂).

C. The t-test for responsiveness (X₃) toward customer satisfaction (Y)

1. Formulation for H_0 and H_a

H_0 : Partially, there is no significant relationship between customer satisfaction (Y) and responsiveness (X₃).

H_a : Partially, there is significant relationship between customer satisfaction (Y) and responsiveness (X₃).

2. Testing criteria

H_0 is rejected and H_a is accepted if $t_{count} > t_{table}$

H_0 is accepted and H_a is rejected if $t_{count} < t_{table}$

3. Testing result

By applying 5% significance level, it is obtained that the score of t_{table} is 1.6612 (one side test), and the t_{count} is 3.440. Because the t_{count} is larger than t_{table} ($3.440 > 1.6612$), then H_0 is rejected and H_a is accepted. It means that partially, there is significant

relationship between customer satisfaction (Y) and responsiveness (X₃).

D. The t-test for assurance (X₄) toward customer satisfaction (Y)

1. Formulation for Ho and Ha

Ho: Partially, there is no significant relationship between customer satisfaction (Y) and assurance (X₄).

Ha: Partially, there is significant relationship between customer satisfaction (Y) and assurance (X₄).

2. Testing criteria

Ho is rejected and Ha is accepted if $t_{count} > t_{table}$

Ho is accepted and Ha is rejected if $t_{count} < t_{table}$

3. Testing result

By applying 5% significance level, it is obtained that the score of t_{table} is 1.6612 (one side test), and the t_{count} is 2.781. Because the t_{count} is larger than t_{table} ($2.781 > 1.6612$), then Ho is rejected and Ha is accepted. It means that partially, there is significant relationship between customer satisfaction (Y) and assurance (X₄).

E. The t-test for empathy (X₅) toward customer satisfaction (Y)

1. Formulation for Ho and Ha

Ho: Partially, there is no significant relationship between customer satisfaction (Y) and empathy (X₅).

Ha: Partially, there is significant relationship between customer satisfaction (Y) and empathy (X₅).

2. Testing criteria

Ho is rejected and Ha is accepted if $t_{count} > t_{table}$

Ho is accepted and Ha is rejected if $t_{count} < t_{table}$

3. Testing result

By applying 5% significance level, it is obtained that the score of t_{table} is 1.6612 (one side test), and the t_{count} is 3.979. Because the t_{count} is larger than t_{table} ($3.979 > 1.6612$), then Ho is rejected and Ha is accepted. It means that partially, there is significant relationship between customer satisfaction (Y) and empathy (X₅).

• Simultaneously Hypothetical Test Analysis (F-test Analysis)

Simultaneously hypothetical test is a test for multiple linear regressions, to test whether or not there is significant relationship between the dependent variable (customer satisfaction) and five independent variables (tangible, reliability, responsiveness, assurance, and empathy) simultaneously.

1. Formulation for Ho and Ha

Ho: Simultaneously, there is no significant relationship between the dependent variable (customer satisfaction) and five independent variables (tangible, reliability, responsiveness, assurance, and empathy).

Ha: Simultaneously, there is significant relationship between the dependent variable (customer satisfaction) and five independent variables (tangible, reliability, responsiveness, assurance, and empathy).

2. Testing criteria

Ho is rejected and Ha is accepted if $F_{count} > F_{table}$

Ho is accepted and Ha is rejected if $F_{count} < F_{table}$

3. Testing result

By applying 5% significance level, it is obtained that the score of F_{table} is 2.3113 and the F_{count} is 117.855. Because the F_{count} is larger than F_{table} ($117.855 > 2.3113$), then Ho is rejected and Ha is accepted. It means that simultaneously, there is significant relationship between the dependent variable (customer satisfaction) and five independent variables (tangible, reliability, responsiveness, assurance, and empathy) at PKU Muhammadiyah Hospital in Yogyakarta.

- **Multiple Correlation Coefficients Analysis**

It is used to define the significance of relationship between all independent variables simultaneously toward the dependent variable. Based on the statistical calculation using SPSS 10.00 for Windows, it is defined that the *R-value* is 0.929. It lies on the range 0.50 – 1.00, which means that the relationship is very significant.

Also, the value of determination coefficient (R^2) is defined. It is 0.862 or 86.20%. It indicates that service quality dimensions contribute 86.20% of influences toward the customer satisfaction at PKU Muhammadiyah Hospital in Yogyakarta, and remaining 13.80% is influenced by other variables beyond the equation model.

4.2.2. Second Hypothesis

The second hypothesis says reliability contributes most dominantly the customer satisfaction at PKU Muhammadiyah Hospital in Yogyakarta. It is formulated to prove scientifically whether or not reliability is the most dominant factor affecting the customer satisfaction. The five service quality dimensions to be measured here are tangible, reliability, responsiveness, assurance, and empathy toward the customer satisfaction. The result will inform us which one among those five determines the highest customer's perception about the current health care service provided by PKU Muhammadiyah Hospital. From the multiple linear regressions statistical result by using SPSS for Windows Release 10.00, it is stated that reliability

(X₂) contributes most dominantly the customer satisfaction (Y) with the highest positive regression coefficient (0.316). It is followed by responsiveness (X₃) at the second by 0.204; empathy (X₅) at the third by 0.176; tangible (X₁) at the fourth by 0.174; and the fifth is assurance (X₄) by 0.159. Refer to the second hypothesis test; reliability is proven statistically the service quality dimension that contributes most dominantly the customer satisfaction at PKU Muhammadiyah Hospital in Yogyakarta.

4.3. Implications

The mathematical model that describes the influence of tangible (X₁), reliability (X₂), responsiveness (X₃), assurance (X₄), and empathy (X₅) toward the customer satisfaction (Y) can be written in the following equation:

$$Y = -0.071 + 0.174X_1 + 0.316X_2 + 0.204X_3 + 0.159X_4 + 0.176X_5$$

Based on the above mathematical model of multiple linear regressions, following interpretations can be made:

1. The constant value is -0.071. It means that if all variables tangible (X₁), reliability (X₂), responsiveness (X₃), assurance (X₄), and empathy (X₅) remain constant or equal zero (0), the customer satisfaction will decrease by 0.071 score.

2. Tangible (X_1) is one of variables that affect the customer satisfaction (Y) with positive regression coefficient 0.174. It means if tangible (X_1) increases by 1 score, the customer satisfaction (Y) will increase by 0.174 score with the assumption that X_2 , X_3 , X_4 , and X_5 remain constant.
3. Reliability (X_2) is one of variables that affect the customer satisfaction (Y) with positive regression coefficient 0.316. It means if reliability (X_2) increases by 1 score, the customer satisfaction (Y) will increase by 0.316 score with the assumption that X_1 , X_3 , X_4 , and X_5 remain constant.
4. Responsiveness (X_3) is one of variables that affect the customer satisfaction (Y) with positive regression coefficient 0.204. It means if responsiveness (X_3) increases by 1 score, the customer satisfaction (Y) will increase by 0.204 score with the assumption that X_1 , X_2 , X_4 , and X_5 remain constant.
5. Assurance (X_4) is one of variables that affect the customer satisfaction (Y) with positive regression coefficient 0.159. It means if assurance (X_4) increases by 1 score, the customer satisfaction (Y) will increase by 0.159 score with the assumption that X_1 , X_2 , X_3 , and X_5 remain constant.
6. Empathy (X_5) is one of variables that affect the customer satisfaction (Y) with positive regression coefficient 0.176. It means if empathy (X_5) increases by 1 score, the customer satisfaction (Y) will increase by 0.176 score with the assumption that X_1 , X_2 , X_3 , and X_4 remain constant.

7. In general, PKU Muhammadiyah Hospital has already satisfied its customers (the patients and their families), whose average score of customer satisfaction (Y) equals to 4.69.
8. In term of dominance, it is noticed that reliability (X₂) contributes most dominantly the customer satisfaction at PKU Muhammadiyah Hospital, whose regression coefficient is 0.316.

