CHAPTER IV

DATA COLLECTING AND PROCESSING

4.1 Data Collecting

Tokopedia is an Indonesian technology company with a mission to achieve digital economic equality. Since it was founded in 2009, Tokopedia has transformed into a unicorn that is influential not only in Indonesia but also in Southeast Asia. Tokopedia is known as market-place for customer to customer business, it plays role on the electronic commerce as online trading. The researcher conducts the research about electronic service quality analysis in Tokopedia.

In this research, the data were obtained from expert's linguistic variables that has the similarity in subject of the research and result of questionnaire's previous research. This research used dimensions and attributes of electronic service quality from previous research. Data were collected by previous research and literature. The purpose of the fuzzy rule is to make the value of fuzzy set and membership function for input of each level to determine the prioritized dimensions and attributes of electronic service quality framework. Electronic service quality (E-Servqual) consist of dimensions, and every dimension has the attributes. Thus, in order to know the prioritized dimensions and attribute, the researcher make the fuzzy set determination as the measurement of the linguistic variable based on the previous research. This fuzzy set determination is used for all the attributes and dimension, either input or output. Then, rule-based system is applied, the necessary of fuzzy rule is to define the score of the output which is being analyze the highest score to have the prioritized one. The data input of attribute is the mean score from the previous research, and the input of dimensions is the result of the

attribute's output, thus, as the input of E-Servqual. The detailed data for this research will be shown below.

4.1.1 Framework

Electronic service quality frameworks consist of several dimensions and attributes. In E-Servqual practices consist of web design, responsiveness, confidentiality of security, approachability of access, efficiency, system availability, fulfillment, and merchandising. The complete dimensions and attributes of electronic service quality frameworks from Zeithaml et al (2009) and modified by the researcher then it is shown in Table 4.1.

Table 4. 1 Dimensions and Attributes of Electronic Service Quality

Dimensions	Attributes
Web Design	Satisfied with the directions guide in finding the search menu, login and others
	Interface and appearance that spoils the customer's look
	Fast promptness of the presentation site
	Up to date information that follows the demand of customer
Responsiveness	Customer service has the willingness to help every customer's problems until it solved in simplest way
	Readiness of the employee for the respond to the customer
	Timeliness and speed while response and solve the problem
Confidentiality of security	Protect the privacy of customer in proper
	Protect the transaction of customer from the error/broken
Approachability of access	Provide the contact access to control the problem and complain of customer
	Provider has the customer service in online for 24 hours
Efficiency	Ease of finding what is needed by the customer
	Loading less of the website
System availability	Web site systems run the offer accurately
	The system is rarely having trouble or error
Fulfillment	Honest on every offer given by the provider to customer fulfill the promises, provide shopping activities, safety and comfort
Merchandising	Large amount of promotion offered
	Many variations of promotion such as discount, free delivery and others

In the table above is shown the dimensions and its attributes of electronic service quality framework that researcher chooses as the framework to define the prioritized dimensions and attributes of electronic service quality. This framework is concern on the electronic service quality aspect for improving the satisfaction of customer. Zeithaml et

al (2009) stated that there are five basic dimensions of electronic service quality that can be driven. As lack of specification on the basic service quality, Tubagus (2018) expanded the dimensions and its attributes in order to make the analysis more accurate and understandable

4.1.2 Attributes and Mean Scores

In the previous research, data of the respondents is processing of validation test and reliability test. Therefore, the data can be categorized as reliable data and can be continued to be proceed in this research. The result is mean data of respondents from previous research Tubagus (2018), the mean data of the previous research is used to get dimensions value from the average of its attributes, this research using the mean data to have more propriate dimensions score that based on the rules, the result more accurate to derivate to its attributes, thus, the prioritized dimensions and attribute will be knows, that is shown in Table 4.2.

Table 4. 2 Mean Score for Every Attributes

Dimension	Attribute	Mean Score
Web Design	(1) Navigation Structure	3,93
	(2) Interface/ Appearance	3,95
	(3) Fast presentation	3,93
	(4) Updated information	3,90
Responsiveness	(1) Willingness to help customer	3,76
	(2) Readiness	3,97
	(3) Promptness (Timeliness and speed)	3,88
Confidentially of security	(1) Physical security	4,10
	(2) Financial security	4,10
Approachability of access	(1) Ease of contact	4,04
	(2) Timely access	3,94
Efficiency	(1) Convenience	4,18
	(2) Promptness	3,77
System availability	(1) Accurate order	3,99
	(2) Error	3,67
Fulfillment	(1) Trustworthiness	4,08
	(2) Reputation of service	4,09
Merchandising	(1) Number of offering	3,93
	(2) Variety of offering	3,96

Based on the table above, the mean score is used for the input of each attributes to have the score for dimensions. Thus, the dimension's mean score will be used for determining the highest score of dimensions E-Servqual.

4.2 Data Processing

4.2.1 Fuzzy Sets Determination

Fuzzy sets determination is used to determine the score of expert's linguistic variable for each dimensions and attributes of electronic service quality frameworks for e-commerce Tokopedia. The figure of fuzzy sets determination is shown in Figure 4.1.
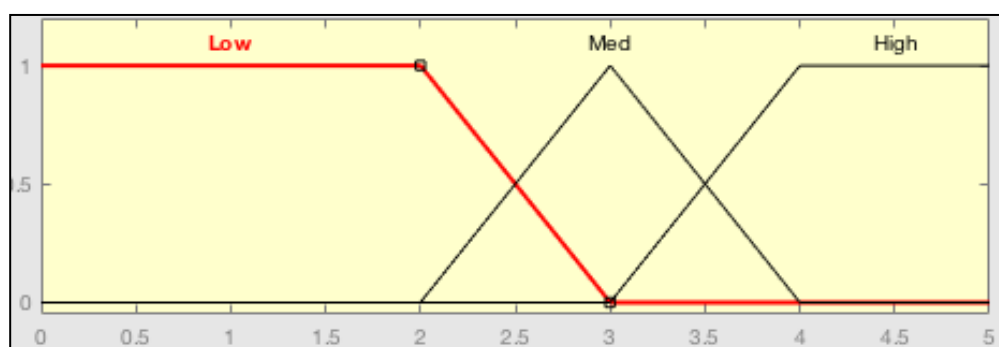

Figure 4. 1 Fuzzy Sets Determination from Mathlab

The weights of fuzzy set are based on Likert Scale. The range of Likert scale are Very Poor is 1; Poor is 2; Moderate is 3; Quite Good is 4; Very Good is 5. Rating scales typically require the respondent to select their answer from range of verbal statement or numbers (Dawes, 2008). Likert scale is translated into 3 parameters. Likert scale is translated into Low with the weights of score are 1, 2 and 3 ; Medium weights score are 2,3, and 4; and High weights score are 3,4, and 5.

4.2.2 Membership Function

Membership function is used to find out each membership function of dimensions and attribute in electronic service quality frameworks. The membership function can be done after the create the fuzzy sets. Each of membership function for every dimension that consists of attributes will be detailed below.

1. Web Design

   Web Design has 3 linguistic variables which are Very Poor is 1; Poor is 2; Moderate is 3; Quite Good is 4; Very Good is 5. Likert scale is translated into 3 parameters. Likert scale is translated into Low with the weights of score are 1, 2 and 3 ; Medium weights score are 2,3, and 4; and High weights score are 3,4, and 5. Membership function of Web Design is shown in Figure 4.2.
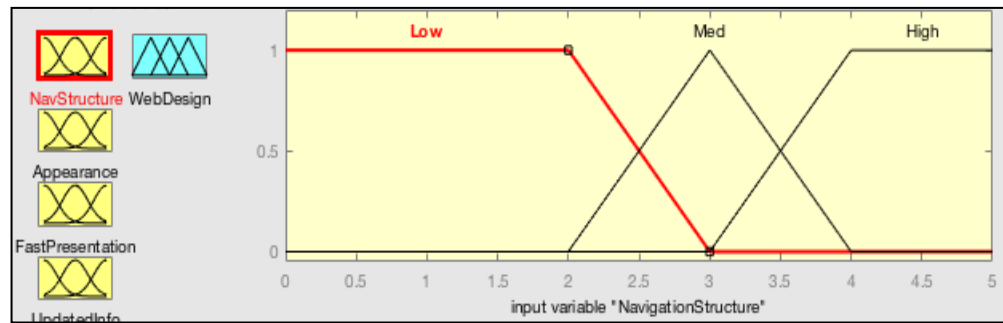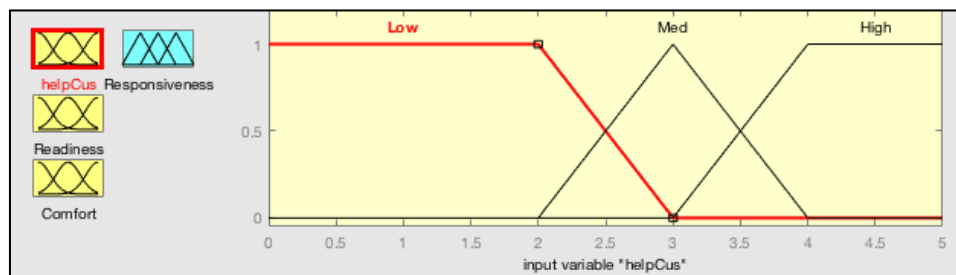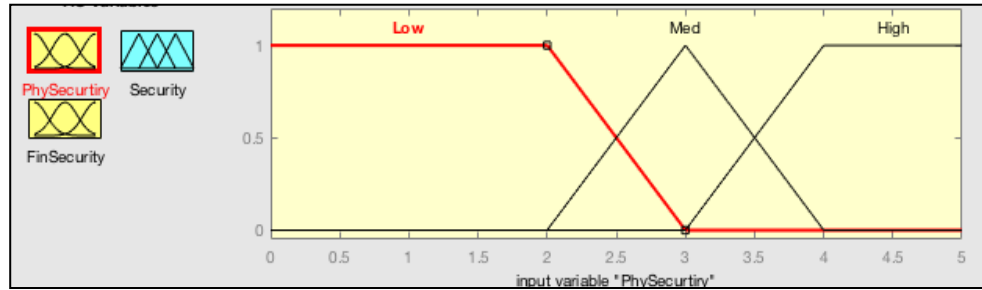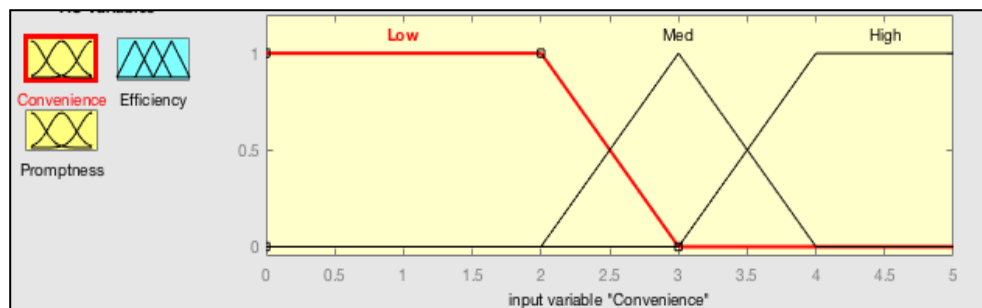
Figure 4. 2 Membership Function of Web Design

2. Responsiveness

Responsiveness has 3 linguistic variables which are Very Poor is 1; Poor is 2; Moderate is 3; Quite Good is 4; Very Good is 5. Likert scale is translated into 3 parameters. Likert scale is translated into Low with the weights of score are 1, 2 and 3 ; Medium weights score are 2,3, and 4; and High weights score are 3,4, and 5. Membership function of Responsiveness is shown in Figure 4.3.

Figure 4.3 Membership Function of Responsiveness

3. Security

Security has 3 linguistic variables which are Very Poor is 1; Poor is 2; Moderate is 3; Quite Good is 4; Very Good is 5. Likert scale is translated into 3 parameters. Likert scale is translated into Low with the weights of score are 1, 2 and 3 ; Medium weights score are 2,3, and 4; and High weights score are 3,4, and 5. Membership function of Security is shown in Figure 4.4.
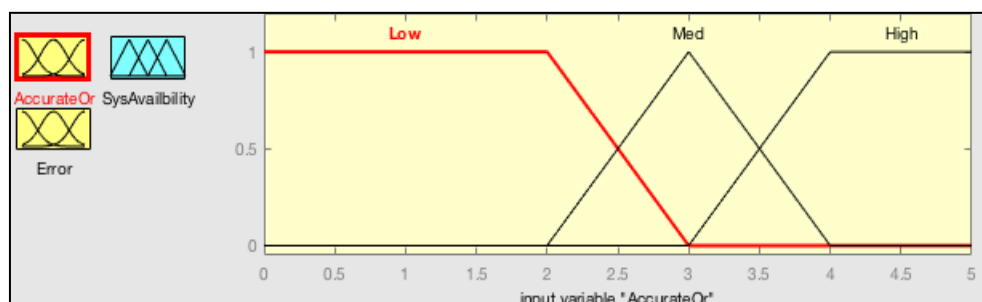
Figure 4. 4 Membership Function of Security

4. Efficiency

   Efficiency has 3 linguistic variables which are Very Poor is 1; Poor is 2; Moderate is 3; Quite Good is 4; Very Good is 5. Likert scale is translated into 3 parameters. Likert scale is translated into Low with the weights of score are 1, 2 and 3 ; Medium weights score are 2,3, and 4; and High weights score are 3,4, and 5. Membership function of Efficiency is shown in Figure 4.5.
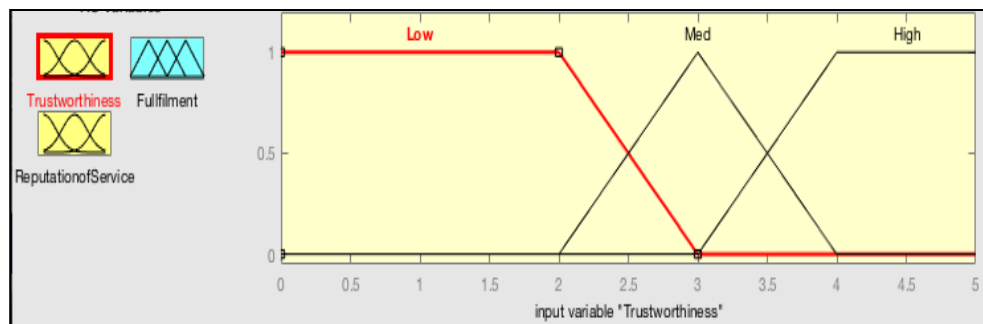

Figure 4. 5 Membership Function of Efficiency

5. System Availability

   System Availability has 3 linguistic variables which are Very Poor is 1; Poor is 2; Moderate is 3; Quite Good is 4; Very Good is 5. Likert scale is translated into 3 parameters. Likert scale is translated into Low with the weights of score are 1, 2 and 3 ; Medium weights score are 2,3, and 4; and High weights score are 3,4, and 5. Membership function of System Availability is shown in Figure 4.6.
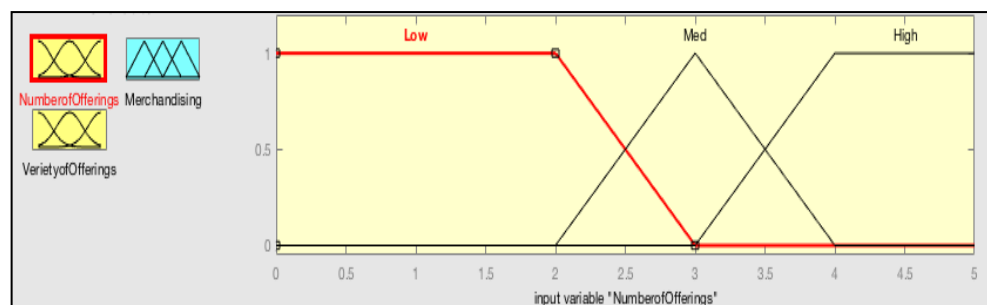

Figure 4. 6 Membership Function of System Availability

6. Fulfillment

   Fulfilment has 3 linguistic variables which are Very Poor is 1; Poor is 2; Moderate is 3; Quite Good is 4; Very Good is 5. Likert scale is translated into 3 parameters. Likert scale is translated into Low with the weights of score are 1, 2 and 3 ; Medium weights score are 2,3, and 4; and High weights score are 3,4, and 5. Membership function of Fulfilment is shown in Figure 4.7.

Figure 4. 7 Membership Function of Fulfillment

7. Merchandising

   Merchandising has 3 linguistic variables which are Very Poor is 1; Poor is 2; Moderate is 3; Quite Good is 4; Very Good is 5. Likert scale is translated into 3 parameters. Likert scale is translated into Low with the weights of score are 1, 2 and 3 ; Medium weights score are 2,3, and 4; and High weights score are 3,4, and 5. Membership function of Merchandising is shown in Figure 4.8.

Figure 4. 8 Membership Function of Merchandising

4.2.3   Fuzzy Rule System

Development of fuzzy rule system using Mamdani Inference System. The general form of fuzzy rules is shown as below:

1. Web Design
   a. Web Design/Site Design = A
   b. Satisfied with the directions guide in finding the search menu, login and others = a_1
   c. Interface and appearance that spoils the customer's look = a_2
   d. Fast promptness of the presentation site = a_3
   e. Up to date information that follows the demand of customer = a_4

   R_1 = IF a_1 is LOW AND a_2 is LOW AND a_3 is LOW AND a_4 is LOW THEN A is LOW

   R_2 = IF a_1 is LOW AND a_2 is MED AND a_3 is LOW AND a_4 is MED THEN A is LOW

   R_3 = IF a_1 is LOW AND a_3 is LOW THEN A is LOW

   R_4 = IF a_1 is MED AND a_2 is MED AND a_3 is MED AND a_4 is MED THEN A is MED

   R_5 = IF a_1 is MED AND a_2 is LOW AND a_3 is MED AND a_4 is LOW THEN A is MED

   R_6 = IF a_1 is MED AND a_2 is HIGH AND a_3 is MED AND a_4 is HIGH THEN A is MED

   R_7 = IF a_1 is MED AND a_3 is MED THEN A is MED

   R_8 = IF a_1 is HIGH AND a_2 is HIGH AND a_3 is HIGH AND a_4 is HIGH THEN A is HIGH

   R_9 = IF a_1 is HIGH AND a_2 is MED AND a_3 is HIGH AND a_4 is MED THEN A is HIGH

   R_{10} = IF a_1 is HIGH AND a_3 is HIGH THEN A is HIGH

   R_{11} = IF a_1 is MED OR a_2 is LOW OR a_3 is HIGH OR a_4 is LOW THEN A is LOW

   R_{12} = IF a_1 is HIGH AND a_2 is NOT MED AND a_3 is NOT LOW AND a_4 is MED THEN A is LOW

   R_{13} = IF a_1 is LOW OR a_2 is LOW AND a_3 is LOW AND a_4 is MED THEN A is LOW

   R_{14} = IF a_1 is LOW OR a_2 is MED OR a_3 is LOW OR a_4 is MED THEN A is LOW

   R_{15} = IF a_1 is LOW AND a_3 is LOW THEN A is LOW

   R_{16} = IF a_1 is MED OR a_2 is MED OR a_3 is MED OR a_4 is MED THEN A is MED

R_{17} = IF a_1 is LOW AND a_2 is MED AND a_3 is NOT LOW AND a_4 is MED THEN A is NOT LOW

R_{18} = IF a_1 is NOT LOW AND a_2 is NOT LOW AND a_3 is NOT LOW AND a_4 is NOT LOW THEN A is NOT LOW

R_{19} = IF a_1 is LOW AND a_2 is NOT LOW AND a_3 is LOW AND a_4 is NOT LOW THEN A is LOW

R_{20} = IF a_1 is NOT LOW AND a_2 is NOT LOW AND a_3 is MEDAND a_4 is NOT LOW THEN A is MED

R_{21} = IF a_1 is NOT LOW AND a_3 is MED AND a_4 is NOW LOW THEN A is MED

R_{22} = IF a_1 is NOT LOW OR a_3 is MED OR a_4 is HIGH THEN A is MED

R_{23} = IF a_1 is MED OR a_2 is HIGH AND a_3 is NOT LOW OR a_4 is HIGHTHEN A is HIGH

2. Responsiveness

   a. Responsiveness = B

   b. Readiness of the employee for the respond to the customer = b_1

   c. Timeliness and speed while response and solve the problem = b_2

   d. Customer service has the willingness to help every customer's problems until it solved in simplest way = b_3

   R_1 = IF b_1 is LOW AND b_2 is LOW AND b_3 is LOW THEN B is LOW

   R_2 = IF b_1 is MED AND b_2 is MED AND b_3 is LOW THEN B is MED

   R_3 = IF b_1 is LOW AND b_2 is LOW THEN B is LOW

   R_4 = IF b_1 is LOW AND b_2 is LOW AND b_3 is MED THEN B is LOW

   R_5 = IF b_1 is MED AND b_2 is MED AND b_3 is MED THEN B is MED

   R_6 = IF b_1 is MED AND b_2 is MED AND b_3 is HIGH THEN B is MED

   R_7 = IF b_1 is HIGH AND b_2 is MED AND b_3 is HIGH THEN B is MED

   R_8 = IF b_1 is HIGH AND b_2 is HIGH AND b_3 is HIGH THEN B is HIGH

   R_9 = IF b_1 is HIGH AND b_2 is HIGH AND b_3 is MED THEN B is HIGH

   R_{10} = IF b_1 is LOW OR b_2 is LOW OR b_3 is LOW THEN B isLOW

   R_{11} = IF b_1 is NOT HIGH OR b_2 is LOW OR b_3 is NOT HIGH THEN B is NOT HIGH

   R_{12} = IF b_1 is LOW AND b_2 is NOT HIGH AND b_3 is MED THEN B is NOT HIGH

R_{13} = IF b_1 is NOT HIGH AND b_2 is LOW AND b_3 is NOT HIGH THEN B is NOT HIGH

R_{14} = IF b_1 is NOT LOW OR b_2 is MED OR b_3 is HIGH THEN B is NOT LOW

R_{15} = IF b_1 is MED OR b_2 is MED OR b_3 is HIGH THEN B is MED

3. Confidentially of security
    a. Confidentially of security $= C$
    b. Protect the privacy of customer in proper $= c_1$
    c. Protect the transaction of customer from the error/broken $= c_2$

    R_1 = IF c_2 is LOW THEN C is LOW

    R_2 = IF c_1 is MED OR c_2 is LOW THEN C is LOW

    R_3 = IF c_1 is LOW OR c_2 is MED THEN C is LOW

    R_4 = IF c_1 is LOW AND c_2 is LOW THEN C is LOW

    R_5 = IF c_1 is MED OR c_2 is HIGH THEN C is MED

    R_6 = IF c_1 is HIGH AND c_2 is MED THEN C is MED

    R_7 = IF c_1 is MED OR c_2 is MED THEN C is MED

    R_8 = IF c_1 is HIGH OR c_2 is HIGH THEN C is HIGH

    R_9 = IF c_1 is HIGH AND c_2 is HIGH THEN C is HIGH

    R_{10} = IF c_1 is NOT LOW AND c_2 is NOT LOW THEN C is NOT LOW

    R_{11} = IF c_1 is LOW THEN C is LOW

    R_{12} = IF c_1 is MED OR c_2 is HIGH THEN C is MED

    R_{13} = IF c_1 is LOW AND c_2 is HIGH THEN C is MED

    R_{14} = IF c_1 is MED AND c_2 is LOW THEN C is LOW

    R_{15} = IF c_1 is MED AND c_2 is NOT LOW THEN C is MED

    R_{16} = IF c_1 is MED OR c_2 is NOT LOW THEN C is MED

    R_{17} = IF c_1 is HIGH OR c_2 is NOT LOW THEN C is MED

    R_{18} = IF c_1 is NOT HIGH AND c_2 is HIGH THEN C is LOW

    R_{19} = IF c_1 is NOT HIGH OR c_2 is LOW THEN C is LOW

    R_{20} = IF c_1 is NOT HIGH OR c_2 is HIGH THEN C is MED

4. Approachability of access
    a. Approachability of access $= D$

b. Provide the contact access to control the problem and complain of customer = d_1

c. Provider has the customer service in online for 24 hours = d_2

R_1 = IF d_1 is LOW AND d_2 is LOW THEN D is LOW

R_2 = IF d_2 is LOW THEN D is LOW

R_3 = IF d_1 is MED AND d_2 is MED THEN D is MED

R_4 = IF d_1 is MED OR d_2 is MED THEN D is MED

R_5 = IF d_1 is HIGH AND d_2 is MED THEN D is MED

R_6 = IF d_1 is HIGH OR d_2 is HIGH THEN D is LOW

R_7 = IF d_1 is HIGH AND d_2 is HIGH THEN D is HIGH

R_8 = IF d_1 is LOW THEN D is LOW

R_9 = IF d_1 is MED AND d_2 is LOW THEN D is MED

R_{10} = IF d_1 is MED OR d_2 is LOW THEN D is MED

R_{11} = IF d_1 is HIGH OR d_2 is MED THEN D is MED

R_{12} = IF d_1 is HIGH AND d_2 is MED THEN D is HIGH

5. Efficiency

   a. Efficiency = E

   b. Ease of finding what is needed by the customer = e_1

   c. High speed of loading the website = e_2

   R_1 = IF e_1 is LOW AND e_2 is LOW THEN E is LOW

   R_2 = IF e_1 is LOW OR e_2 is LOW THEN E is LOW

   R_3 = IF e_1 is HIGH AND e_2 is NOT LOW THEN E is MED

   R_4 = IF e_1 is MED AND e_2 is MED THEN E is MED

   R_5 = IF e_1 is HIGH AND e_2 is HIGH THEN E is HIGH

   R_6 = IF e_1 is HIGH AND e_2 is MED THEN E is MED

   R_7 = IF e_1 is NOT LOW AND e_2 is NOT HIGH THEN E is NOT HIGH

   R_8 = IF e_1 is MED AND e_2 is LOW THEN E is LOW

   R_9 = IF e_1 is MED AND e_2 is HIGH THEN E is MED

   R_{10} = IF e_1 is MED OR e_2 is LOW THEN E is LOW

   R_{11} = IF e_1 is LOW OR e_2 is MED THEN E is LOW

6. System availability

   a. System availability = F

b. Web site systems run the offer accurately = f_1

c. The system is rarely having trouble or error = f_2

R_1 = IF f_1 is LOW AND f_2 is LOW THEN F is LOW

R_2 = IF f_1 is LOW AND f_2 is MED THEN F is LOW

R_3 = IF f_1 is LOW AND f_2 is HIGH THEN F is LOW

R_4 = IF f_1 is MED AND f_2 is HIGH THEN F is MED

R_5 = IF f_1 is HIGH AND f_2 is HIGH THEN F is HIGH

R_6 = IF f_1 is HIGH AND f_2 is MED THEN F is MED

R_7 = IF f_1 is HIGH AND f_2 is LOW THEN F is LOW

R_8 = IF f_1 is MED OR f_2 is LOW THEN F is LOW

R_9 = IF f_1 is MED OR f_2 is HIGH THEN F is MED

R_{10} = IF f_1 is NOT LOW OR f_2 is HIGH THEN F is NOT LOW

R_{11} = IF f_1 is MED OR f_2 is HIGH THEN F is MED

R_{12} = IF f_1 is NOT HIGH AND f_2 is MED THEN F is NOT HIGH

R_{13} = IF f_1 is HIGH AND f_2 is NOT LOW THEN F is NOT LOW

R_{14} = IF f_1 is HIGH AND f_2 is NOT LOW THEN F is NOT LOW

R_{15} = IF f_1 is NOT LOW OR f_2 is HIGH THEN F is NOT LOW

R_{16} = IF f_1 is NOT HIGH OR f_2 is LOW THEN F is LOW

R_{17} = IF f_1 is NOT LOW AND f_2 is LOW THEN F is LOW

7. Fulfillment

a. Fulfillment = G

b. Honest on every offer given by the provider to customer = g_1

c. Fulfill the promises, provide shopping activities, safety and comfort =
g_2 R_1 = IF g_1 is LOW AND g_2 is LOW THEN G is LOW

R_2 = IF g_1 is LOW OR g_2 is LOW THEN G is LOW

R_3 = IF g_1 is MED OR g_2 is LOW THEN G is LOW

R_4 = IF g_1 is LOW OR g_2 is MED THEN G is LOW

R_5 = IF g_1 is LOW AND g_2 is LOW MED G is LOW

R_6 = IF g_1 is MED AND g_2 is LOW THEN G is LOW

R_7 = IF g_1 is MED AND g_2 is MED THEN G is MED

R_8 = IF g_1 is HIGH AND g_2 is MED THEN G is MED

R_9 = IF g_1 is HIGH AND g_2 is HIGH THEN G is HIGH

R_{10} = IF g_1 is MED AND g_2 is HIGH THEN G is MED

R_{11} = IF g_1 is MED OR g_2 is HIGH THEN G is MED

R_{12} = IF g_1 is HIGH OR g_2 is MED THEN G is MED

R_{13} = IF g_1 is NOT HIGH AND g_2 is NOT HIGH THEN G is NOT HIGH

R_{14} = IF g_1 is NOT LOW AND g_2 is HIGH THEN G is NOT LOW

R_{15} = IF g_1 is HIGH AND g_2 is NOT LOW THEN G is NOT LOW

R_{16} = IF g_1 is LOW THEN G is NOT HIGH

R_{17} = IF g_1 is MED THEN G is NOT HIGH

R_{18} = IF g_2 is MED THEN G is NOT HIGH

8. Merchandising

    a. Merchandising = M

    b. Large amount of promotion offered = m_1

    c. Many variations of promotion such as discount, free delivery and others = m_2

    R_1 = IF m_1 is LOW AND m_2 is LOW THEN M is LOW

    R_2 = IF m_1 is LOW OR m_2 is LOW THEN M is LOW

    R_3 = IF m_1 is LOW AND m_2 is MED THEN M is LOW

    R_4 = IF m_1 is MED AND m_2 is LOW THEN M is LOW

    R_5 = IF m_1 is MED OR m_2 is LOW THEN M is LOW

    R_6 = IF m_1 is LOW OR m_2 is MED THEN M is LOW

    R_7 = IF m_1 is MED OR m_2 is MED THEN M is MED

    R_8 = IF m_1 is HIGH OR m_2 is MED THEN M is MED

    R_9 = IF m_1 is MED OR m_2 is HIGH THEN M is MED

    R_{10} = IF m_1 is MED AND m_2 is MED THEN M is MED

    R_{11} = IF m_1 is HIGH AND m_2 is MED THEN M is MED

    R_{12} = IF m_1 is HIGH AND m_2 is HIGH THEN M is HIGH

    R_{13} = IF m_1 is NOT LOW AND m_2 is NOT LOW THEN M is NOT LOW

    R_{14} = IF m_1 is NOT HIGH AND m_2 is NOT HIGH THEN M is NOT HIGH

    R_{15} = IF m_1 is NOT LOW AND m_2 is MED THEN M is MED

    R_{16} = IF m_1 is MED OR m_2 is NOT LOW THEN M is MED

    R_{17} = IF m_1 is MED AND m_2 is NOT LOW THEN M is MED

4.2.4   Defuzzification

Defuzzification is used to obtain the result of final crisp output from fuzzy set. The output of fuzzy set from dimensions and attributes are shown as follows:

1. Web design/Site design

    The calculation process of web design is 3.54. Satisfied with the directions guide in finding the search menu, login and others score is 3.93. Interface and appearance that spoils the customer's look score is 3.95. Fast promptness of the presentation site score is 3.93. Up to date information that follows the demand of customer score is 3.90. The result form fuzzy rule is shown in Figure 4.9.
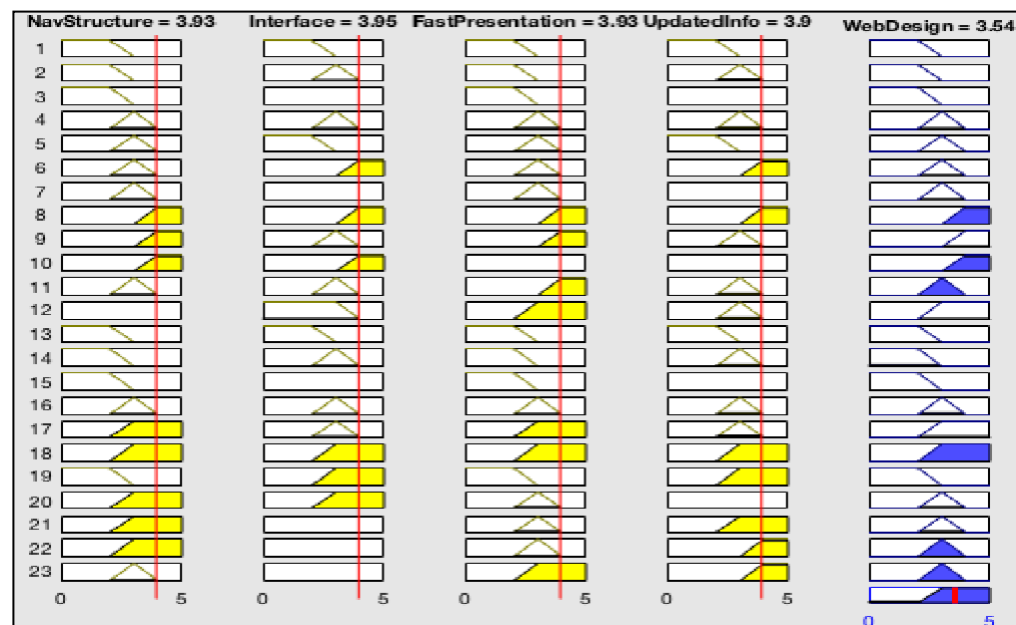

Figure 4. 9 Fuzzy Rule Output of Web Design

2. Responsiveness

    The calculation process of responsiveness is 3.29. Customer service has the willingness to help every customer's problems until it solved in simplest way score is 3.76. Readiness of the employee for the respond to the customer score is 3.97. Timeliness and speed while response and solve the problem score is 3.88. The result form fuzzy rule is shown in Figure 4.10.
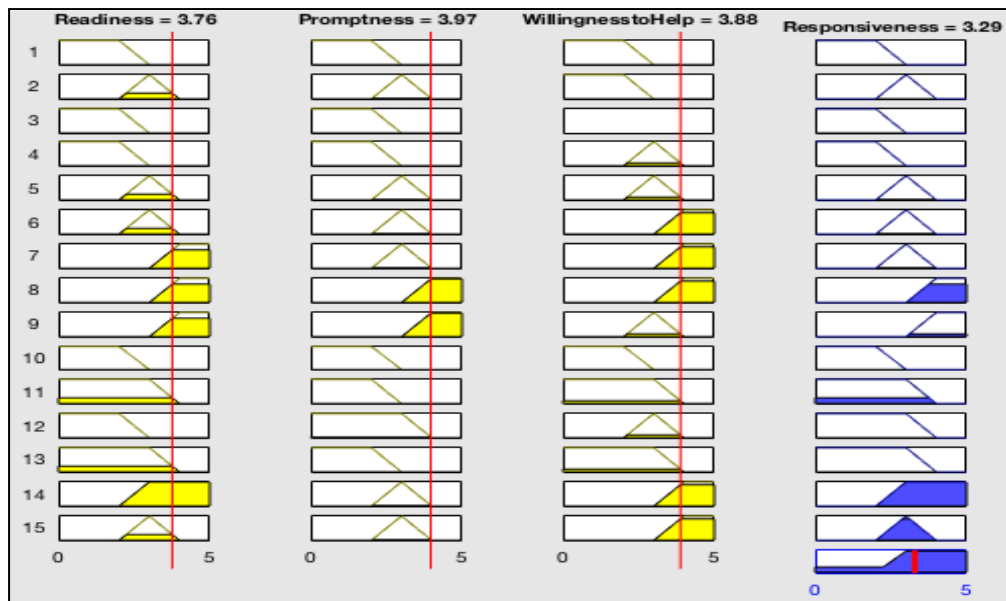
Figure 4. 10 Fuzzy Rule Output of Responsiveness

3. Confidentiality of security

The calculation process of confidentiality of security score is 3.77. Protect the privacy of customer in proper score is 4.11. Protect the transaction of customer from the error/broken score is 4.11. The result form fuzzy rule is shown in Figure 4.11.

Figure 4. 11 Fuzzy Rule Output of Confidentiality of Security

4. Approachability of Access

The calculation process of approachability of access score is 3.77. Provide the contact access to control the problem and complain of customer score is 4.04.

Provider has the customer service in online for 24 hours score is 3.94. The result form fuzzy rule is shown in Figure 4.12.
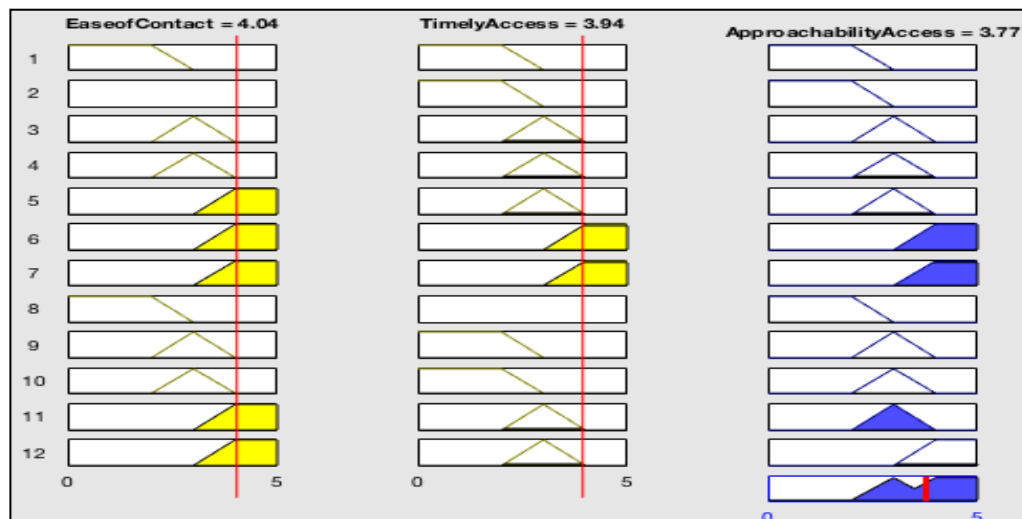

Figure 4. 12 Fuzzy Rule Output of Approachability of Access

5. Efficiency

The calculation process of efficiency score is 3.17. Ease of finding what is needed by the customer score is 4.18. Loading less of the website score is 3.77. The result form fuzzy rule is shown in Figure 4.13.
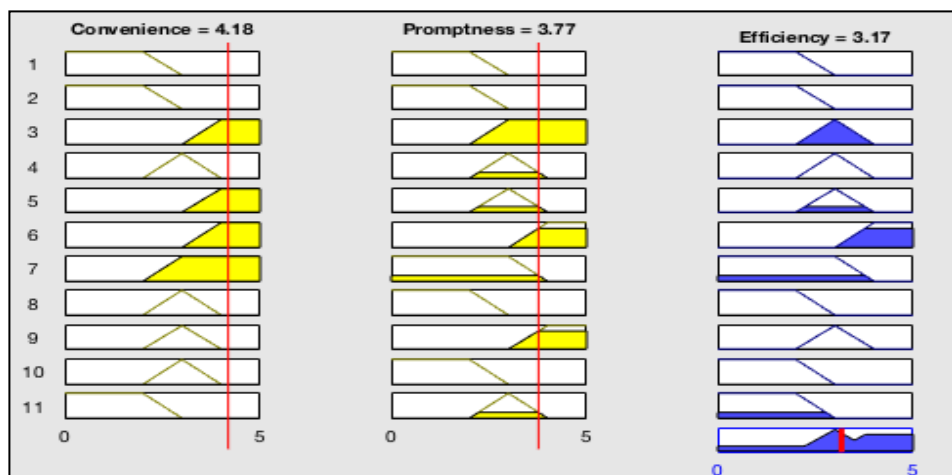

Figure 4. 13 Fuzzy Rule Output Efficiency

6. System availability

The calculation process of system availability score is 3.72. Web site systems run the offer accurately score is 3.99. The system is rarely having trouble or error score is 3.67. The result form fuzzy rule is shown in Figure 4.14.
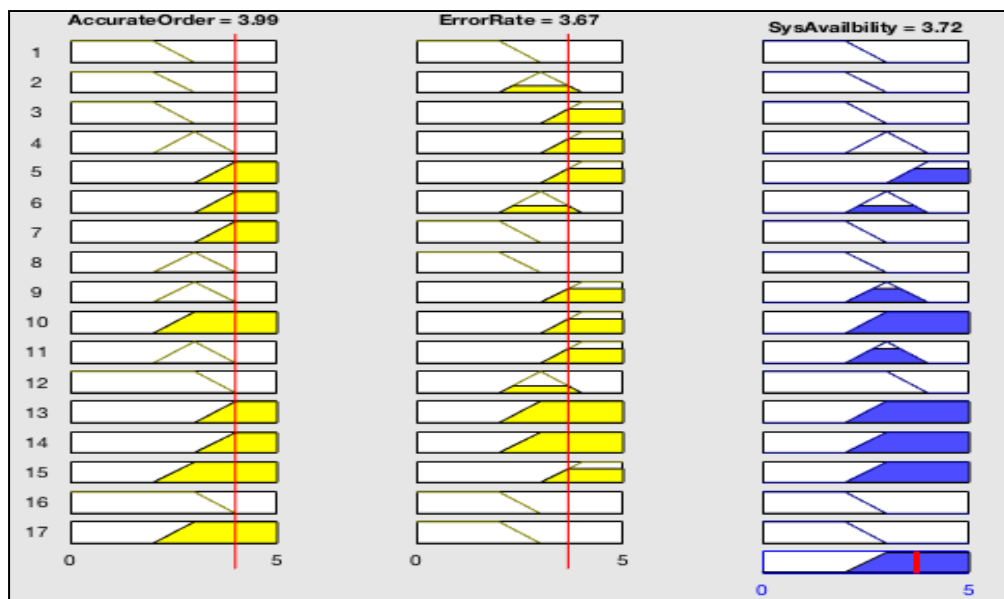
Figure 4. 14 Fuzzy Rule Output of System Availability

7. Fulfillment

    The calculation process of fulfillment score is 3.72. Honest on every offer given by the provider to customer score is 3.99. Fulfll the promises, provide shopping activities, safety and comfort score is 3.67. The result form fuzzy rule is shown in Figure 4.15.
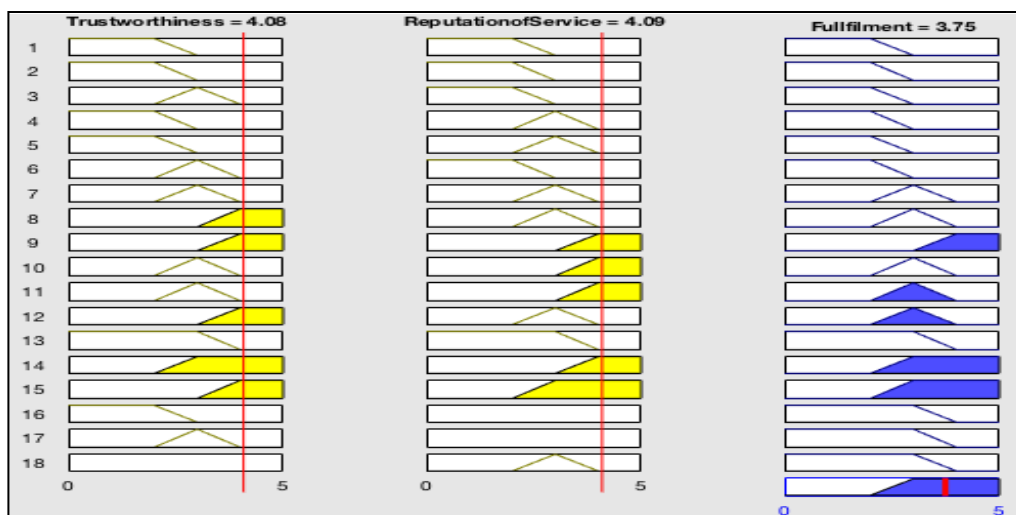

Figure 4. 15 Fuzzy Rule Output Fulfillment

8. Merchandising

The calculation process of merchandising score is 3.6. Large amount of promotion offered score is 3.93. Many variations of promotion such as discount, free delivery and others score is 3.96. The result form fuzzy rule is shown in Figure 4.16.
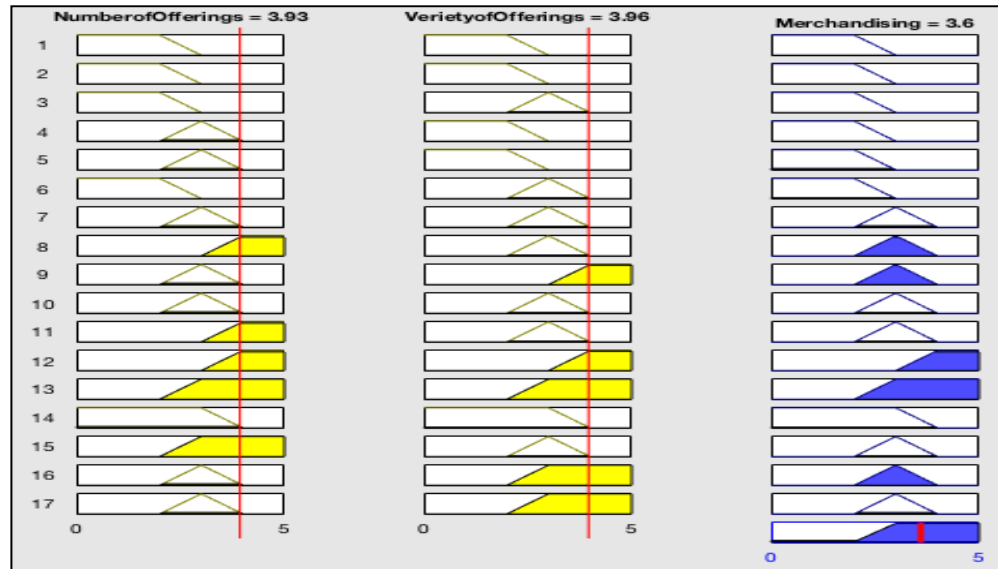

Figure 4. 16 Fuzzy Rule Output of Merchandising

4.2.5 Prioritize Attributes and Dimensions

As the result of defuzzication, the electronic service quality has the dimensions, each dimension consists of attributes. The highest dimensions of electronic service quality will be chosen as the prioritized dimensions based on the highest score. Therefore, there is two dimensions of electronic service quality that has the highest scores below:

1. Confidentiality of security

Confidentiality of security consist of 2 attributes. there are protect the privacy of customer in proper and protect the transaction of customer from the error/broken. The usability of dimensions and attributes are to suggest an action for e-commerce provider site in determining prioritized attributes for managing their business. In dimension of confidentiality of security, there are some rule to define the output of the score based on attribute's input. In calculation, it can be seen that one of the highest scores output is confidentiality with score 3.77. The calculation based on the input of its attributes respectively for protect the privacy of customer in

proper score is 4.10 and protect the transaction of customer from the error/broken score is 4.10.

2. Approachability of access

Approachability of access consist of 2 attributes, there are provide the contact access to control the problem and complain of customer and provider has the customer service in online for 24 hours. The usability of dimensions and attributes are to suggest an action for e-commerce provider site in determining prioritized attributes for managing their business. In dimension of approachability of access, there are some rule to define the output score that based on the attribute's input. In calculation, it can be derived that one of the highest scores output is approachability with score 3.77. The calculation based on the input of its attributes respectively for provide the contact access to control the problem and complain of customer score is 4.04 and provider has the customer service in online for 24 hours score is 3.94.