



## INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE AND MANAGEMENT

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**A FUZZY BASED SERVPERF MODEL TO ASCERTAIN RESTAURANT SERVICE****S. RITA****ASST. PROFESSOR  
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The service performance of the restaurant industry can be measured and improved only by understanding the potential gaps in quality. To achieve this, the service quality must be thoroughly studied from both the conceptual viewpoint and service quality measurement. This study explores and identifies the perceived service quality of customers for different restaurant service dimensions through a fuzzy based SERVPERF measurement technique. Also the factors influencing the service quality of restaurant services are identified and suggestions are given for the improvement.

**KEYWORDS**

*Factor analysis, Fuzzy Logic, Reliability analysis, Service Quality, Triplet Fuzzy Number.*

**INTRODUCTION**

The service quality plays an important role in the success of any business. For the better positioning and improvement of any service organization, it is necessary to evaluate the performance of the service provided by them. To ensure the competitive advantage of the hotel industry, it is essential to do contemporary research on the service quality issues of the industry. Today millions of dollars are spent on designing hotel services in every year. Design is acknowledged as the key aspect for deliberate competition. The practitioners and managers of hotel industry are of the view that the design aspects of hotel services are interior design and services. Even though customer feedbacks are collected for improvements, these are not used effectively, to prioritize hotel service design attributes. Hence, it is necessary to define a process, which will consider all characteristics of services. As far as restaurant is concerned the quality of the food and service is defined as meeting or exceeding the expectations of the customer as if promised by the restaurant. The food should be properly and neatly prepared and the service should be prompt and courteous. The benefit of quality food and service in addition to retaining existing customers will certainly bring new customers through word-of-mouth communication of its customer. Studying the service attributes is a key component for standardizing organization philosophy and it must be a part of the quality improvement initiative.

This study explores and identifies the perceived service quality of customers for different restaurant service dimensions through a fuzzy based SERVPERF measurement technique. This paper is prepared in the following style. Primarily, it provides a review on existing literature regarding the dimensions and applications of SERVQUAL, SERVPERF and fuzzy application to service quality, following which research methodology is presented. Further, the analysis and interpretations are given. Finally this work emphasizes on strategies to improve the service quality of restaurants which will provide valuable insights to that sector.

**LITERATURE REVIEW**

Parasuraman et al. (1985) have indicated that customers form their perception of quality from different elements of the service. SERVQUAL scales have been used in a variety of published studies. SERVPERF - a performance based alternative to the SERVQUAL measure has been developed by Cronin and Taylor (1992). In the SERVPERF model, the main attributes of the service quality of a provider are considered to assess and make comparison between perceived and expected service quality. They argued that a separate survey of customer expectation is unnecessary. Therefore, the model is based on only the perception component of SERVQUAL quality measurement. A summary of individual ratings of the 22 SERVQUAL questionnaire items have been used to identify the level of quality and the five SERVQUAL dimensions are not presupposed. There is also an opinion that there is little theoretical or empirical evidence to support their gap theory as the basis for measuring service quality (Teas, 1993). The versions of SERVQUAL continue to be critiqued and improved; SERVQUAL stands as the best mechanism for assessment and measurement of perceived service quality (Kettinger and Lee, 1995). SERVQUAL instrument for measuring service quality is applicable for a large range of services with minor modifications in the scale. Later gap score which defines the gap between expectations and

perceptions, has been introduced as an enduring perception about the overall excellence of a firm. Further studies confirm that SERVQUAL technique can be appropriately applied in measuring service quality perceptions in restaurants with appropriate modifications and refinement. Buttle (1996) has enlightened that “even though the authors of SERVQUAL had applied refinement to the original SERVQUAL instrument, and they held that the dimensions identified were transferable across business sectors, researchers still keep expressing the theoretical and operational concern and criticisms about the scale”, also he argued that “the numbers and contents of dimensions are varied in reality according to the sector under study”. Vazquez et al. (2001) have pointed out that the scale and its dimensions require customization to the specific service sector in which they are applied. The research of Wilkins et al. (2007) also supports these findings. Sangeeta and Karunes (2004) have applied the SERVQUAL methodology to identify the gap between customer expectations and perceptions of the actual service received, and then QFD is used to identify the set of minimum design quality characteristics. Key and Theresia (2001) have proposed an integrated application on tourist perspective which involves SERVQUAL, Kano’s model and QFD for service industries to evaluate customer satisfaction; this approach guides the managers for the improvement and strengthening of weak service quality attributes. Ching-Shu and Lou-Hon (2007) have analyzed the hotel rating systems in Taiwan and identified the potential areas for improvement. Also they argued that the Taiwan hotel rating system currently has no criteria for evaluating the empathy dimension of service quality. Bharath et al. (2007) have examined the perceptions of South Asians, Caucasians, East Asians, and those of other ethnic origins in their perceptions of Indian restaurants in Malaysia. The findings suggest that there are universal likes and dislikes as well as differential perceptions between ethnic groups. Rooma (2007) has developed a measurement for assessing hotel service quality. The generic SERVQUAL measure has been investigated to check whether the five dimensions are pertinent to the hotel industry. She has attempted an exploratory study and verified the five dimensions of SERVQUAL for hotel. Subsequently she compared her seven dimensional SERVQUAL assessment scaling for the hotel with the actual five dimensional SERVQUAL scaling, but further numerical illustrations are not given in her work. Fuzzy set theory has been introduced by Zadeh (1965) to deal with problems involving uncertainty and fuzziness. Numerous studies have applied fuzzy set theory to research problems involving uncertainty. Chien and Tsai (2000) have used fuzzy number to assess perceived service quality and clarify the strengths and weaknesses of Taiwanese retail stores. According to Alreck and Settle (1995), in marketing research, most questionnaires use Likert scales to measure respondents' attitude, which is linguistic in nature. Instead of data being discrete, they have used statistical methods that accommodate continuous data. Hung (2009) has clarified the evaluation of weapon systems using fuzzy arithmetic operations. In the above fuzzy based researches, the qualitative data or linguistic terms are used to represent imprecise assessments of decision criteria or performance attributes are all expressed using fuzzy number.

**FUZZY AND TRIPLET FUZZY NUMBER (TFN)**

Generally, surveys examining customer perceptions of satisfaction or service quality have used questionnaires in which respondents indicate their feelings with reference to selected linguistic terms. But human judgments of events may vary significantly according to the subjective perceptions or personality of individuals, even when the same linguistic term is used (Chiou et al., 2005). Thus, when using fuzzy number to represent specific linguistic terms, researchers must consider differences among survey respondents. In this study a TFN is used to represent the linguistic term of respondent’s perception of customer satisfaction or service quality. Moreover, the linguistic terms from among which respondents chose to indicate their perception towards service are “very satisfied”, “satisfied”, “fair”, “unsatisfied” and “very unsatisfied”. In the survey questionnaire of this paper, respondents are asked to complete the range of each linguistic term based on their own subjective decision. On a scale of hundred, for example, one respondent has given triplets (0, 0, 25), (0, 25, 50), (25, 50, 75), (50, 75, 100) and (75, 100, 100) meaning “very unsatisfied”, “unsatisfied”, “fair”, “satisfied”, and “very satisfied”, respectively. Figure-1 gives a representation of these triplets reduced to a scale of 5. Another respondent has given triplets (0, 0, 30), (0, 30, 50), (30, 50, 70), (50, 70, 100) and (70, 100, 100) meaning “very unsatisfied”, “unsatisfied”, “fair”, “satisfied”, and “very satisfied”, respectively. Finally, this study aggregated respondent opinions regarding specific linguistic terms by calculating the average triangular fuzzy number for all respondents. Consequently, the final average triangular fuzzy number of each linguistic term is decided and used for the subsequent assignment of a triangular fuzzy number indicating respondent perceptions (Tsaur et al., 1997).

**FUZZY ALGORITHM**

Let the universe of discourse X be a subset of real numbers  $R, X=\{x_1, x_2, \dots, x_n\}$ . A fuzzy set  $\tilde{A} = \{(x, \mu_A(x)) \mid x \in X\}$  is a set of ordered pairs where  $\mu_A$  is called a membership function  $\mu_A : X \rightarrow [0, 1]$  (Peter et al., 1993).

Let  $\tilde{A} = \{(x, \mu_A(x)) \mid x \in X\}$  and

$$\tilde{B} = \{(x, \mu_B(x)) \mid x \in X\}$$

(Refer Klir and Yuan (1995))

$$\mu_{A \cap B}(x) = \min(\mu_A(x), \mu_B(x)), \quad x \in X,$$

$$\mu_{A \cup B}(x) = \max(\mu_A(x), \mu_B(x)), \quad x \in X.$$

The triplet  $(a_1, a_2, a_3)$  denotes a triangular fuzzy number  $\tilde{A}$ . The membership function  $\mu_A(x)$  of  $\tilde{A}$  is defined as

$$\mu_A(x) = \begin{cases} Y_a^L(x) = \frac{x - a_1}{a_2 - a_1}, & a_1 \leq x \leq a_2, \\ Y_a^R(x) = \frac{x - a_3}{a_2 - a_3}, & a_2 \leq x \leq a_3, \\ 0, & \text{Otherwise} \end{cases}$$

The triangular membership function is exhibited in figure – 2.

The procedure for defuzzification of TFN is as follows.

In general, the average of fuzzy sets is defined as follows:

$$\tilde{A}_{kAvg} = \frac{\sum_{i=1}^n \tilde{A}_k^i}{n} = \left( \frac{\sum_{i=1}^n \tilde{A}_{k1}^i, \sum_{i=1}^n \tilde{A}_{k2}^i, \sum_{i=1}^n \tilde{A}_{k3}^i}{n} \right) \text{ ----- (7.2)}$$

for  $k = 1, 2, \dots, K$ , where  $\tilde{A}_k^i$  is the triangular fuzzy number of  $k^{th}$  linguistic term under  $i^{th}$  respondent,  $a_{k1}^{(i)}, a_{k2}^{(i)}, a_{k3}^{(i)}$  represent the lower value, the moderate value and the upper value of the support of  $\tilde{A}_k^{(i)}$  respectively;  $n$  denotes the total number of respondents;  $K$  denotes the number of linguistic terms; there are five linguistic terms in this study.

The algebraic operations of fuzzy number differ from the algebraic operations involving real numbers. Let  $\tilde{A}$  and  $\tilde{B}$  be two triangular fuzzy numbers parameterized by the triplet  $(a_1, a_2, a_3)$  and  $(b_1, b_2, b_3)$  respectively and the algebraic operations can be expressed as (refer Abbasbandy and Hajjari, 2009)

Subtraction:  $\tilde{A} \ominus \tilde{B} = (a_1 - b_3, a_2 - b_2, a_3 - b_1)$   
 Defuzzification:  $V_A = \frac{a_1 + 10a_2 + a_3}{12}$  (refer Pandian and Natarajan, 2010)

The  $\alpha$ -cut procedure is given as follows;

The  $\alpha$ -cut set  $\tilde{A}_\alpha$  of a fuzzy set  $\tilde{A}$  is defined as

$$\tilde{A}_\alpha = \{x / \mu_A(x) \geq \alpha, x \in X\}, (0 \leq \alpha \leq 1), \alpha \in R.$$

$(a+(b-a)\alpha, b, c-(c-b)\alpha)$  are the limits of  $\alpha$ -cut for a closer range.

The limits of a TFN  $(a, b, c)$  when  $\alpha=0.5$  is  $(a + (b-a) 0.5, b, c - (c-b) 0.5)$ .

**OBJECTIVE OF THE STUDY**

This paper highlights the customer perceptions of restaurant service quality through SERVPERF and IPA methodology. The fundamental objectives to be accomplished through this study are:

- To develop a new methodology to assess the service performance through triplet fuzzy numbers (TFNs) with fuzzy  $\alpha$ -cut for restaurant service ,
- To test the reliability of the defuzzified values obtained from  $\alpha$ -cut TFNs for measuring service performance in restaurant and identifying the factors that determine the service quality of restaurant service, and
- To suggest some recommendations to maximize the service quality improvement for restaurant service.

**RESEARCH METHODOLOGY**

The seven dimensions of SERVQUAL scaling given by Rooma (2007) are taken as base measuring attributes of this analysis. Further the measuring attributes are modified to Indian context. The six dimensions of SERVPERF with 56 attributes are taken up for studying the service performance of restaurant. These attributes are measured with seven point Likert Scale. The trained interviewers are provided with both oral and written instructions regarding the purpose, procedure, and the use of the results. The survey has been conducted in a restaurant which is attached with a hotel in Vellore, Tamilnadu, India. The 56 attribute SERVPERF questionnaire was used to collect the data from the respondents. Questionnaires were answered by the respondents without external help. The data was collected from customers who came to dine in with their families or alone. The sampling technique used was convenience sampling. The research design was descriptive in nature. The sample size is 595. The data was compiled in the SPSS sheet. However, the triangular fuzzy numbers (TFNs) make linguistic terms more objective and are different from general research using statistical methods in marketing research. The TFNs are used in this paper for making precise results. Initially the actual linguistic values of the SERVPERF are replaced with TFNs. Then the fuzzy  $\alpha$ -cut is taken at 0.5. Further these  $\alpha$ -cut TFNs are defuzzified and crisp values are obtained. Then the reliability is tested for this crisp values and the dimensionalities are studied by factor analysis.

**DATA ANALYSIS AND INTERPRETATION**

**ALGORITHM**

In this section, the method of measuring service performance using the crisp value obtained through fuzzy  $\alpha$ -cut TFNs is discussed. The following are the five steps of the method.

- Step 1:** Creating a triangular fuzzy number for the  $i^{th}$  consumer's linguistic terms for perceived quality, say,  $\tilde{A}$
- Step 2:** To minimize the wider limits of TFNs,  $\alpha$ -cut is taken at 0.5 for all  $\tilde{A}$
- Step 3:** Get the  $\alpha$ -cut TFNs
- Step 4:** Convert the  $\alpha$ -cut TFNs to fuzzy crisp values
- Step 5:** Replace all the linguistic values with crisp  $\alpha$ -cut TFN values

**RELIABILITY TEST**

The reliability of the restaurant performance score is examined by the analyses done on the scale's reliability. Reliability assessments are based on the internal consistency of the items, the alpha representing the same dimension of service quality as well as the overall scale. Cronbach's alpha is taken for validity assessment on correlation and factor analysis. Then the corrected item-to-total correlations are also examined. Among the alpha values of the individual gap score of the items, none had a correlation with the total scores that is lower than the 0.35 cut-off value suggested by Saxe and Weitz (1982). All the item-to-total correlations for the expectations scale ranged from 0.691 to 0.693. Reliabilities for linear combinations of the five subscales are also computed to assess the overall internal consistency of the gap scores (Nunnally 1978). The



overall alpha value is 0.962 for the gap score (refer table – 1). These values suggest that both measures exhibit desirable levels of internal consistency at the aggregate level.

#### EXPLORATORY FACTOR ANALYSIS

A sampling adequacy value derived from KMO Bartlett test if closer to 1 indicates the patterns of correlations are relatively compact and so the factor analysis should yield distinct and reliable factors. According to Kaiser (1974), if the measure of sampling adequacy is greater than 0.5 then accept it and proceed with factor analysis. The degree of common variance among the fifty six variables is "middling" at 0.758, which states that sampling adequacy is acceptable (refer table – 2). To scrutinize the dimensionality of the scale, the correlation matrix of difference gap scores of expectations and perceptions is analyzed by Principal Component Analysis (PCA). This PCA of performance score extracted six factors with eigen-values greater than 1.0, accounting for 74.84 percent of the total variation. Rotation results give conceptually meaningful dimensions. Factor analysis results are provided in table – 4. The initial solution indicates that a single factor adequately summarizes the data on the basis of factor loadings and variance explained (refer table – 3). Factor analysis of the difference scores provides a clear picture of meaningful factor structure. 74.84% of total variance is explained after rotations of all the attributes and six components are extracted. The identified factors are renamed as follows: Factor 1: Basic needs, Factor 2: Empathy, Factor 3: Décor, Factor 4: Professionalism, Factor 5: Location and Ambience, Factor 6: Promptness

#### INFERENCE OF EXTRACTED FACTORS

The diner in a restaurant has many choices in all restaurant segments. It is quite a common fact that consumer is sophisticated and always impatient to be served. If the restaurant is not providing to the fullest satisfaction of their customer, the consumer will shift his loyalties to another. Restaurateurs must ask the customer to define great service. Today, the restaurateur who provides great service and value has a competitive edge over those operators who do not. To this end of finding what great service is, we have applied factor analysis. It can be seen from the factor loadings, that the attributes of restaurant service are grouped into six sets which are exhibited in figure – 8.2 and are described under.

**Basic needs:** The first set of attributes grouped under this factor reveals that the restaurant should provide good food as well as the best service. Generally customer likes the food to be what is promised on the menu, to be cooked and prepared properly, to be clean and to have the correct flavour. That is considered as quality food. The quality food does not mean healthy food or gourmet food. It is simply what is promised. Quality service is typically that which is timely and courteous. From the above grouping it is clear that if a restaurant concentrates on the first eight attributes the basic needs of a customer will be satisfied to a great extent.

**Empathy:** The second set of attributes are regarding empathy of the workers assuming various roles like listening carefully to complaints, problem-solving abilities, socialising with guests, greeting the customer with a smile or a hand shake, understanding the customers' requirements and having customers' best interest at heart. It is evident from the values obtained that the first six attributes play a pivotal role in satisfying the customer in the second most important set of attributes.

**Décor:** The third set includes the various attributes like arrangement of tables, clean and attractive tableware, glasses and plates and good presentation of food items, juice etc. Here the first three attributes stand out in their importance.

**Professionalism:** The fourth set of attributes, where services include the promises made on the services, neat and professional appearance of staff, recognising the regular restaurant customer, accuracy in billing and availability of menu that is easily readable etc. Only the first two attributes play a pivotal role in this factor.

**Location and Ambience:** The fifth set of attributes reveals that convenient location, image of the restaurant and the other provision are playing a vital role.

**Promptness:** The promptness and timely service also play an important role in a restaurant service. In the last two factors, there is a single most important attribute.

#### DISCUSSION

The SERVPERF model has covered all the dimensions in the field of service quality. The model has effectively grouped the attributes into 6 factors with the most basic attributes coming in factors one and two as would be rightly expected. To improve the customer satisfaction, the attributes mentioned as the most important ones in each factor must be given special attention to. As the hotel under consideration is located on a highway, they should concentrate on satisfying the transit customers who drop in for a while to refresh and relax. If the service they offer is good, these customers will become regular visitors when they take up this route and recommend it to their friends also. If the management is still hesitant, there would be other players who will offer them better service and capture this restaurant's customers. The IPA shows that the hotel management will have to work from scratch to achieve superior service quality because it is quite evident that customers do not appreciate their service at present. Knowing what customers expect is the most important step in delivering quality service. The management should conduct frequent surveys to find out what are the expectations and perceptions of the customers and to see how effective their changes have been. When they do so, they get a picture of what their current status is. All the members, right from the general manager, to the chef, to the waiters, should work towards one common goal, which is to improve the service quality offered in the restaurant. Well, the management should always keep in mind that if they do not take care of their customers, someone else will.

#### CONCLUSION

Preparation and serving of food is an art. Food must not only be delicious but must also be presented in appetizing manner. The quality of the food and service is defined as meeting or exceeding the expectations of the customer as if promised by the restaurant. In a restaurant people

are not only buying food, but they are also paying for a certain level of service. Quality service is typically that which is prompt and courteous. That is what customers expect. Exceeding those expectations with extra service is a plus and can overshadow mediocre food. The benefit of quality food and service is that customers will come back and will recommend the restaurant to friends. It would be helpful if SERVPERF are used to make periodic surveys in both national and local of normative expectations for each industry segment. That would help users of SERVPERF to determine whether a change in perceptions is the result of a change in normative expectations or a change in service quality delivered. Thus, the SERVPERF technique is a valid, reliable and cost-effective method to understand the customers' attitude. The SERVPERF interview is easy to administer and easy to respond to. Hence the restaurant services can make use of this tool to enhance their quality of service.

Table – 1: Reliability Statistics

<b>Cronbach's Alpha</b>	<b>No. of Items</b>
0.962	56

Table – 2: KMO and Bartlett's Test

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>		.758
<b>Bartlett's Test of Sphericity</b>	<b>Approx. Chi-Square</b>	113851.898
	<b>Df</b>	1378
	<b>Sig.</b>	.000

Table – 3: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.343	36.497	36.497	19.343	36.497	36.497	12.40	23.397	23.397
2	7.742	14.608	51.105	7.742	14.608	51.105	7.358	13.883	37.280
3	4.089	7.714	58.819	4.089	7.714	58.819	6.804	12.838	50.118
4	3.451	6.511	65.330	3.451	6.511	65.330	5.189	9.791	59.909
5	2.538	4.788	70.118	2.538	4.788	70.118	4.017	7.580	67.490
6	2.504	4.724	74.843	2.504	4.724	74.843	3.897	7.353	74.843
7	1.838	3.467	78.310						
8	1.529	2.886	81.195						
9	1.306	2.465	83.660						
10	1.256	2.369	86.030						
11	1.105	2.085	88.114						
12	1.075	2.028	90.142						
13	.880	1.660	91.802						
14	.659	1.244	93.046						
15	.638	1.203	94.249						
16	.551	1.040	95.290						
17	.503	.949	96.239						
18	.418	.788	97.027						
19	.298	.562	97.589						
20	.272	.514	98.103						
21	.208	.392	98.496						
22	.190	.358	98.854						
23	.167	.315	99.169						
24	.113	.213	99.382						
25	.090	.170	99.552						
26	.069	.130	99.682						
27	.044	.083	99.765						
28	.028	.053	99.819						

29	.022	.041	99.860						
30	.017	.032	99.892						
31	.013	.025	99.917						
32	.011	.021	99.939						
33	.010	.018	99.957						
34	.008	.015	99.972						
35	.006	.011	99.983						
36	.004	.007	99.989						
37	.002	.003	99.993						
38	.001	.003	99.995						
39	.001	.002	99.997						
40	.000	.000	99.997						
41	.000	.000	99.998						
42	.000	.000	99.998						
43	.000	.000	99.998						
44	.000	.000	99.998						
45	.000	.000	99.999						
46	.000	.000	99.999						
47	.000	.000	99.999						
48	.000	.000	99.999						
49	.000	.000	99.999						
50	9.12E-05	.000	100.00						
51	8.36E-05	.000	100.00						
52	8.06E-05	.000	100.00						
53	7.80E-05	.000	100.00						

Table – 4: Rotated Component Matrix

	Components (Factors)					
	1	2	3	4	5	6
Prompt food service	.892					
Courteous employees	.868					
Friendliness of the staff	.844					
Appealing interior and exterior hotel décor	.826					
Responsiveness to customers requests	.816					
Good quality music played	.814					
Choice of menu, buffets, beverages and wines	.782					
Pays attention to the customer throughout	.778					
Provision of children's facilities	.755					
Experienced staff	.705					
Modern and comfortable furniture	.700					
Value for money	.687					
Comfortable, relaxed and welcome feeling	.681					
Advance and accurate information about the prices	.675					
Attractive lobby	.661					
Excellent dishes and desserts	.591					
Ability of staff to instill confidence in customers	.586					
Accuracy of food orders	.544					
Staff performing services right the first time	.522					
Listening carefully to complaints		.855				
Problem-solving abilities of the staff		.838				
Staff socializing with guests		.758				
Customer loyalty programmes		.735				

Greeting the customer with a smile or a shake hand	.726			
Understanding the customers' requirements	.715			
Restaurant to have customers' best interest at heart	.670			
Cleanliness and comfort of the restaurant	.557			
Comfortable seats	.551			
Visually appealing menu and dishes	.541			
Availability of staff to provide service	.510			
Spaciousness of the restaurant	.502			
Well-trained and knowledgeable staff	.797			
Complimentary items	.747			
Quick and neat delivery	.742			
Timely delivery services	.619			
Makes customer feel special	.613			
Reasonable rates	.609			
Accurate information about restaurant services	.599			
Appearance of tableware, glasses and dishes	.557			
Hygienic bathrooms and toilets	.540			
Willingness of the staff to provide help promptly	.540			
Staff with good communication skills	.528			
Neat and professional appearance of staff		.801		
Recognizing the restaurant customer		.728		
Accuracy in billing		.605		
Calling the customer by name		.541		
Availability of menu that is easily readable		.504		
Convenient restaurant location			.882	
Image of the restaurant			.638	
Provision of evening entertainment			.620	
Performing the service at the time promised				.816
Availability of reserving seats and homely delivery facilities				.730
Availability of the restaurant all days in the week				.552

Figure – 1: The  $i^{th}$  respondent's linguistic term

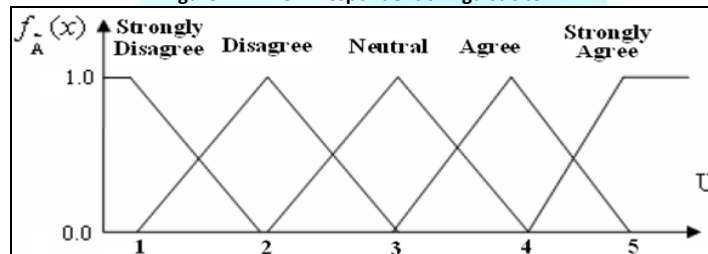
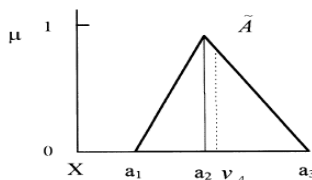


Figure – 2: A triangular fuzzy number  $\tilde{A}$



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