

# ESTIMATION OF MAXIMUM AGE GROUP THAT TEACHER'S ATTITUDE AFFECT STUDENT'S PERFORMANCE AND PERSONALITY DEVELOPMENT

A.Praveen Prakash<sup>1</sup>, A. Rajkumar<sup>2</sup>, N. Jose Parvin Praveena<sup>3</sup>

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*Abstract: In this paper we find the maximum age group affected by teachers attitude affect student's performance and personality development using refined Time dependent matrices. This paper is organized with the following seven sections, section one is introductory in nature giving the over all contents from the survey made about student's performance and personality development in the above sold blocks. Section two explaining about simple fuzzy matrix and section three attitude for teachers attitude section four the raw data at hand is converted or transformed into a time-dependent matrix, section five after obtaining the time dependent matrix using the techniques of average and standard deviation, the dependent data matrix is converted into an average time dependent data matrix (ATD-matrix) section six to make the calculations simple and easy we make use of simple average techniques to convert the ATD matrix into a fuzzy matrix with entries  $e_{ij}$ , where  $e_{ij} \in \{-1, 0, 1\}$ . We call this matrix as the refined time dependent data matrix. The value of  $e_{ij}$  is obtained in a special way, section five we get the combined effect time dependent data matrix (CETD matrix) which gives the cumulative effect of all these entries. In the final stage the raw sum is found out for the CETD matrix and conclusion are derived based on the raw sums. All these are represented by graphs and graphs play a vital role in exhibiting the data by the simplest means that can be ever understood by a layman.*

*Keywords: Behavioral problems, college, school, peak age, fuzzy matrix*

## 1. INTRODUCTION

Fuzzy logic was developed by Lotfi A. Zadeh in the 1960s in order to provide mathematical rules and functions which permitted natural language queries. Fuzzy logic provides a means of calculating intermediate values between absolute true and absolute false with resulting values ranging between 0.0 and 1.0. With fuzzy logic, it is possible to calculate the degree to which an item is a member. For example, if a person is .83 of tallness, they are "rather tall." Fuzzy logic calculates the shades of gray between black/white and true/false.

Fuzzy logic is a super set of conventional logic and contains similarities and differences with Boolean logic. Fuzzy logic is similar to Boolean logic, in that Boolean logic results are returned by fuzzy logic operations when all fuzzy memberships are restricted to 0 and 1. Fuzzy logic differs from Boolean logic in that it is permissive of natural language queries and is more like human thinking; it is based on degrees of truth. Fuzzy subset is the generalization of the ordinary set. In mathematics, there are only two acceptable situations for an element. The element is being a member of or not being a member of a subset. The merit of

L.A.Zadeh has been to attempt to leave this impasse by introducing the notion of weighted membership. An element may belong more or less to a subset and from there introduce a fundamental concept that of fuzzy subset.

Fuzzy set theory provides us with a respectable inventory of theoretical tools for dealing with concepts expressed in natural language. The tools enable us to represent linguistic concepts. Most of which are inherently vague, by fuzzy sets of various types, and to manipulate them in a great variety of ways for various purposes. They enable to express and deal with various relations, functions, and equations that involve linguistics concepts and they allow us to fuzzify any desired area of classical mathematics to facilitate emerging applications. There are countless applications for fuzzy logic

Fuzzy Logic deals with those imprecise conditions about which a true/false value cannot be determined. Much of this has to do with the vagueness and ambiguity that can be found in everyday life. For example, the question: Is it HOT outside? probably would lead to a variety of responses from those asked. These are often labeled as subjective responses, where no one answer is exact. Subjective responses are relative to an individual's experience and knowledge. Human beings are able to exert this higher level of abstraction during the thought process. For this reason, Fuzzy Logic has been compared to the human decision making process. Conventional Logic is by nature related to the Boolean Conditions (true/false). What Fuzzy Logic attempts to encompass is that area where a partial truth can be established, that is a gradient within the true/false realm. In fuzzy set theory, although it is still possible to have an exact yes/no answer as to set membership, elements can now be partial members in a set.

Every individual has the right that his physical social and emotional needs should be satisfied in society as well as in class room environment. The desire to be accepted and protected in childhood is natural. He or she needs help for adjustment. This is his/her rights that he/she could be provided with an environment in which his/ her natural capabilities flares so that he/she may become useful member of the society.

In this paper we find the maximum age group affected by teacher attitude towards his/her personality development.

#### *Simple fuzzy matrix:*

- The raw data is gives the matrix representation. Entries corresponding to the intersection of rows and columns are values corresponding to a live network. The raw data, as it is transformed into a raw time dependent data matrix by taking along the rows the age group and along the columns the health problems suffered by teachers because of stress.
- Using the raw data matrix, convert it into the Average Time Dependent Data (ATD) Matrix  $(a_{ij})$  by dividing each entry of the raw data matrix by the number of years that is, the time period. This matrix represents a data which is totally uniform.

- At the third stage, the average or mean and the standard deviation (SD) of every column in the ATD matrix, are determined. Using the average  $\mu_j$  of each  $j$ th column and  $\sigma_j$  the S.D of each  $j$ th column, a parameter  $\alpha$  from the interval  $[0, 1]$  is chosen and the Refused Time Dependent Data Matrix (RTD matrix) ( $e_{ij}$ ) is formed using the formula.  
 If  $a_{ij} \leq (\mu_j - \alpha \sigma_j)$  then  $e_{ij} = -1$   
 else if  $a_{ij} \in (\mu_j - \alpha \sigma_j, \mu_j + \alpha \sigma_j)$  then  $e_{ij} = 0$   
 else if  $a_{ij} \geq (\mu_j + \alpha \sigma_j)$  then  $e_{ij} = 1$   
 where,  $a_{ij}$ 's are the entries of the ATD matrix. The ATD matrix is thus, converted into the Referred Time Dependent Data Matrix. This matrix is also at times termed as the fuzzy matrix as the entries are 1, 0 and -1. Now, the row sum of this matrix gives the maximum age group, who are prone to health hazards. One can combine these matrices by varying the parameter  $\alpha \in [0, 1]$ , so that the Combined Effective Time Dependent Data (CETD) matrix is obtained. The row sum is found out for the CETD matrix and conclusion are derived based on the row sums. All these are represented by graphs and graphs play a vital role in exhibiting the data by the simplest means that can be ever understood by a layman.

Teachers attitude affects students performance and personality development is taken under six attributes.

- A<sub>1</sub> - Respondents like praise
- A<sub>2</sub> - Respondents dislike the punishment of the teacher
- A<sub>3</sub> - Sympathetic behavior of the teacher increase interest towards studies.
- A<sub>4</sub> - undesirable behavior of fellows hurt studies
- A<sub>5</sub> - Respondents feel difficulties in new environment
- A<sub>6</sub> - Respondents dislike discussion in classroom

*Initial raw-data matrix of attitude problem of order 4 × 6*

Years	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	S <sub>6</sub>
6-10	1	2	5	6	5	6
11-16	5	11	15	19	19	15
17-25	7	15	13	18	15	17
23-29	6	11	17	18	18	20

*ATD matrix of attitude problem of order 4 × 6*

ears	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	S <sub>6</sub>
6-10	0.2	0.4	1	1.2	1	1.2
11-16	0.83	1.83	2.5	3.16	3.16	2.5
17-25	1.17	2.5	2.17	3	5	2.83
23-29	0.86	1.57	2.43	2.57	2.57	2.86

*The Average S.D. of the given ATD matrix*

Average	0.76	1.57	2.02	2.48	2.93	2.35
S.D	0.12	0.56	0.37	0.59	0.48	0.46

RTD matrix for  $\alpha = 0.1$

$$\begin{bmatrix} -1 & -1 & -1 & -1 & -1 & -1 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & -1 & 1 \end{bmatrix}$$

Row sum matrix

$$\begin{bmatrix} -6 \\ 6 \\ 6 \\ 4 \end{bmatrix}$$

RTD matrix for  $\alpha = 0.15$

$$\begin{bmatrix} -1 & -1 & -1 & -1 & -1 & -1 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & -1 & 1 \end{bmatrix}$$

Row sum matrix

$$\begin{bmatrix} -6 \\ 6 \\ 6 \\ 4 \end{bmatrix}$$

**Graph depicting the maximum age group of students affect by teacher attitude for  $\alpha = 0.2$**

$$\begin{bmatrix} -1 & -1 & -1 & -1 & -1 & -1 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & -1 & 1 \end{bmatrix} \begin{bmatrix} -6 \\ 6 \\ 6 \\ 4 \end{bmatrix}$$

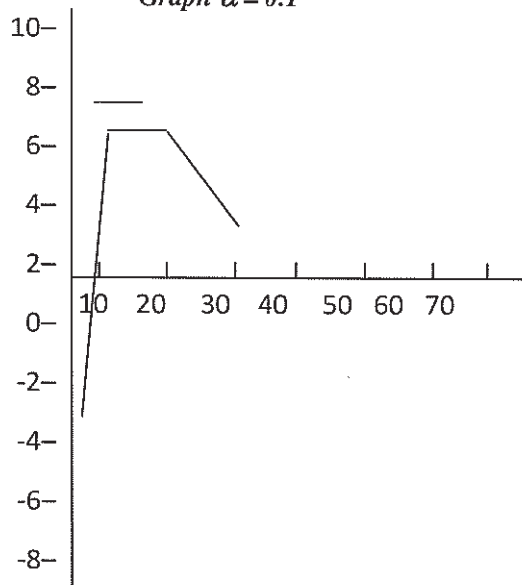
Graph depicting the maximum age group of students affect by teacher attitude for  $\alpha = 0.35$

$$\begin{bmatrix} 0 & -1 & -1 & -1 & -1 & -1 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & -1 & 1 \end{bmatrix} \begin{bmatrix} -5 \\ 6 \\ 6 \\ 4 \end{bmatrix}$$

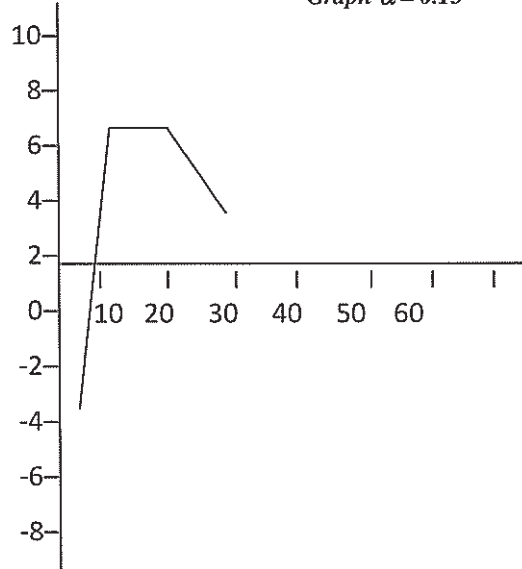
*CETD matrix of attitude problem of order 4 x 6*

$$\begin{bmatrix} -3 & -4 & -4 & -4 & -4 & -4 \\ 4 & 4 & 4 & 4 & 4 & 4 \\ 4 & 4 & 4 & 4 & 4 & 4 \\ 4 & 4 & 4 & 4 & -4 & 4 \end{bmatrix} \begin{bmatrix} -23 \\ 24 \\ 24 \\ 20 \end{bmatrix}$$

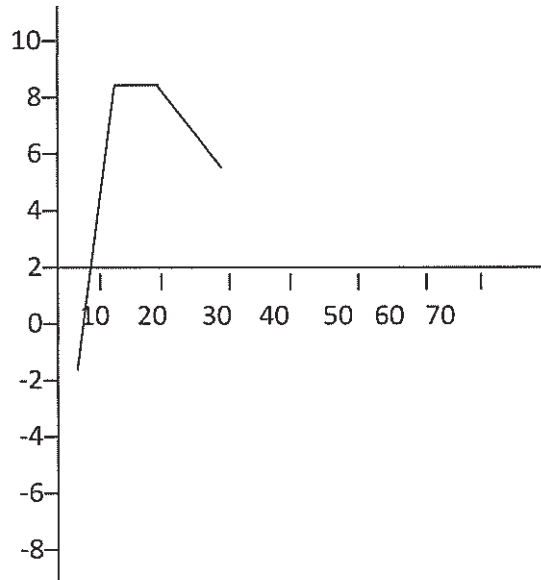
*Graph  $\alpha = 0.1$*



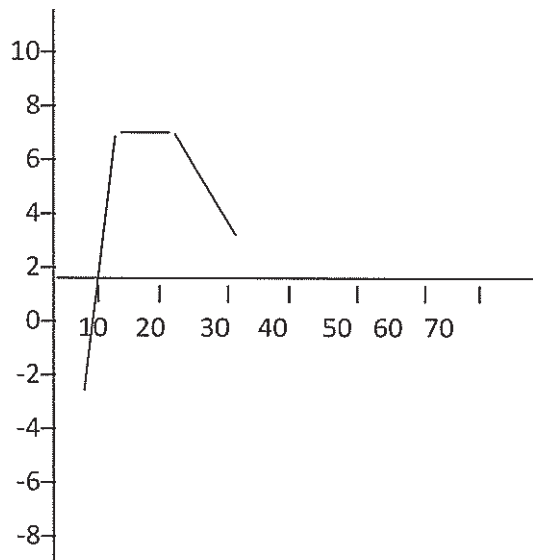
*Graph  $\alpha = 0.15$*



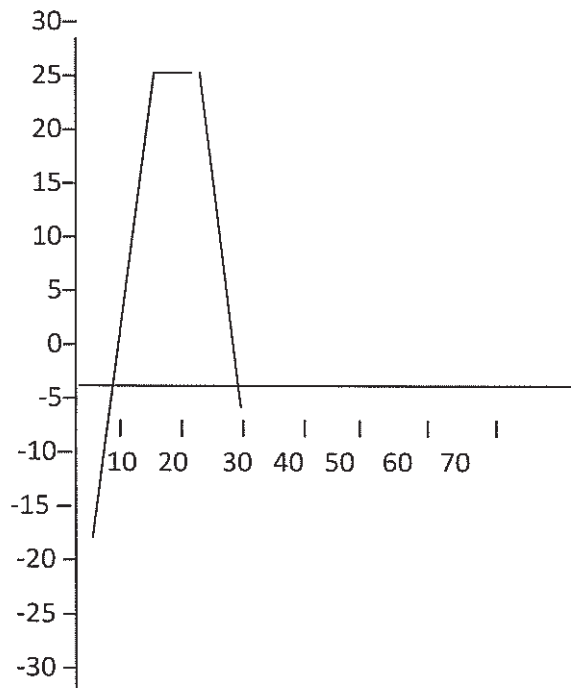
*Graph  $\alpha = 0.2$*



*Graph  $\alpha = 0.35$*



*CETD MATRIX*



### 3. CONCLUSION

1. Students disliked discussion in classroom and behavior of their class fellows.
2. Most of the students expressed their deep concern punishment of teachers without some reason.
3. Almost all students favored their praise, hurdles in a new environment and kind-hearted behavior of their teacher.
4. Majority of the teacher highlighted the hostile and aggressive behavior and unsatisfactory educational performance of emotionally disturbed students.
5. Home environment is a key factor of either development or destruction.
6. Survey proves that the problem the damage is peak at the age of 13-21. Above results are confirmed by CETD matrix.

### 4. REFERENCES

1. Alder, E. David A. (1975) moods and personality, Rinehard and Wirston, US.
2. Dacey J. (1997) Adolescent Development MC-Graw-hill, Boston.
3. Rao, D.B. (2004) Adjustment of adolescents discovery publishing, New Delhi.
4. Nabi Bux Jumari Fazalur Rahman, Ajmal Chaudry, Saeedul Hasar Chisti. Behavioural problems of secondary school students
5. K. Bindhu, Sheekal, V. Kothari and Suja. Yogic Techniques for organizational stress management
6. Study of disease related to digestive tract using fuzzy modeling as a tool to control diarrhea.
7. Victor Devadass. Estimation of maximum age group affected by diabetes by Victor Devadass.