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APPLICATION OF FUZZY LOGIC IN THE EDUCATIONAL SYSTEM

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Abstract

A lot of exercises are typically used in the teaching and learning process to fix, transfer, and evaluate ideas and information about a subject. Learning is the process of developing, through experience, relatively permanent changes in comprehension, attitude, knowledge, information, capacity, and ability. A change can improve or worsen learning and might be voluntary or involuntary. Learning is a cognitive process that occurs internally. The study of fuzzy sets is crucial to understanding how to recognize patterns. Between verbal factors and quantitative characterization, it acts as a bridge. Information that is either absent or incomplete can be provided using fuzzy set membership values. Our daily difficulties can be solved via fuzzy relations, depending on two different circumstances. When it comes to student learning, teacher quality is extremely important. Measurement of teacher quality is crucial for this reason. Even if a student's success, whether excellent, decent, average, or poor, depends on his or her particular field of study. By assigning membership scores between 0 and 1 to each student's specialization using the fuzzy ranking technology, we will attempt to draw conclusions about the performance of the students in this paper.

Keywords: *Education System, Distinction, Decision, and Relativity Ranking and Comparison Matrix, Evaluation Procedure, and Fuzzy Relation in Maximum-Produce Composition.*

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1. Introduction

Uncertainty grows as a result of the significant developments in science, but as uncertainty is undesirable in science, it must be avoided at all costs. Uncertainty is evident when science deals with the practical realities of life, but it is viewed as unscientific. The alternative, or modern, approach holds that uncertainty is not only a necessary evil for science, but also one that offers enormous benefits. Computers assist us in problem solving because they are built on a mathematical foundation, which drives them to uphold accuracy as one of the fundamental mathematical principles.[1] Because practical life's complex problems, such as the expectation of profit in business, disease diagnosis in the medical field, psychological issues in the social field, etc., are not exact and vary, some modification is necessary, a computer alone cannot solve them in all aspects of practical life.

About 50 years ago, Zadeh familiarized fuzzy set theory in an effort to address these uncertainty-related problems. Fuzzy set theory is an overview of conventional set theory in the sense that any element x of a given space χ and a subset A of it can have a relationship value μ_A (x) ϵ [0,1] in a set A which epitomizes the degree of its have its place to that set. To put it another way, A is a fuzzier subset of the space, as indicated by the relationship function $\mu_{A(x)}$, x ϵ χ.

In this paper, we suggest employing fuzzy ranking techniques in fuzzy sets to apply fuzzy logic to high school admissions decisions. This study uses fuzzy ranking in fuzzy sets to analyses the link between the official test given to students and the preliminary test. In this study, the decision to enroll kids in high schools was made based on their preliminary test results. In directive to degree the Rank amongst the student and each high school, fuzzy ranking techniques have been used [7]. This ranking indicates whether a pupil is qualified to enroll in the high school or fuzzy ranking approach, which have both been compared. All Rank procedures have been used to calculate the data in this research, and the best fuzzy ranking techniques have been identified. The schools in which each kid has enrolled have been chosen by a fuzzy ranking process based on the results of the test used to evaluate readiness for high school. By comparing the student's and each school's best rankings, the solution has been identified.

This paper attempts to explain how the official test and the student's preliminary test relate to one another. High schools in the Tamilnadu city of Chennai have been studied for this essay. In Tamil Nadu, a test is given to students who are ready to move on to high school [6]. Taking into account their test results, each student has been enrolled in a high school. Exam results for students are not much influenced by their academic performance in school. As a result, it has been considered that their academic performance scores are fixed. Additionally, it is believed that the schools' success scores are set. The socioeconomic level of students, student psychology, school success, teacher factor, order of choice, and different cities that students choose are not taken into account when searching the database that is used in this work. Every year, the exam's level of difficulty or simplicity may fluctuate, however, this change solely impacts the high school base points. The outcome won't change as this change has an equal impact on all students.

In this paper, for each high school improper point was determined by the results of the students' exams (over 100 marks total). Since fuzzy sets include the membership degree, we have utilized them as a tool. The best rank between each student and each school has been determined using fuzzy ranking methods, which is the presumed solution. High school takes remained implicitly supposed in the solution. This study has made use of collected official data[8]. First, for the academic year 2020–2021, a total of 5000 students have been looked up in this article. According to the results of the official test, some randomly chosen kids were afterwards searched. This programme has allowed for the comparison of Rank. The rank's validity and dependability order have been established.

After that, during the 2020–2021 academic year, searches were conducted for pupils who were ready for the exam of the transfer to high school education. Official data indicates that 30,000 students have been studied. These children have been subjected to frequent preliminary testing at specialized study facilities. Among these students, ten have been chosen at random. For all pupils, the outcomes of the application are consistent. At the conclusion of the academic year, average scores from the preliminary exams given to students throughout the year were taken. By employing a ranking, it has been possible to identify the high schools in which students will enroll based on the average of their preliminary test results. Additionally, research has been done on the kids' verified test results [9][10].

Fuzzy ranking techniques were used to choose the high schools in which students will enroll created on the average of their test results. The correlation between the students' official test and the practice exams has been investigated. An example provided in our primary result can be used to clarify this.

2. Definitions and Terminology

The terms and definitions listed below are used in our suggested methodology for calculating student quality.

Definition 2.1: Relativeness Function

let $\tilde{s}$ and $\tilde{h}$ variable quantity well-defined on a set $\tilde{X}$. Relativeness function represented as $\tilde{g}(\tilde{s}/\tilde{h})$ is well-defined

$$\tilde{g}(\tilde{s}/\tilde{h}) = \frac{\tilde{g}_{\tilde{h}}(\tilde{s})}{\max\{\tilde{g}_{\tilde{h}}(\tilde{s}),\tilde{g}_{\tilde{s}}(\tilde{h})\}} \quad \ldots\ldots\ldots\ldots(2.1.1)$$

Where $\tilde{g}_{\tilde{h}}(\tilde{s})$ represents a membership function with regard to $\tilde{h}$ and $\tilde{g}_{\tilde{s}}(\tilde{h})$ represents $\tilde{h}$'s membership function with respect to $\tilde{s}$. The membership of the variables preferring an over the variables $\tilde{h}$. might thus be seen as the relativity function $\tilde{g}(\tilde{s}/\tilde{h})$. Equation 1 can be expanded to include many variables.

Definition 2.2 FS Set

Let $\tilde{X}$ be a collection for entire universe and also let $\tilde{N}$ be a parameter set. Let $\tilde{F}^{\tilde{X}}$denote everyone's set fuzzy subsets for $\tilde{X}$. Let $\tilde{A} \subset \tilde{N}$. A pair $(\tilde{F};\tilde{A})$ is termed an FS set on *X*, wherever *F* is a Maps provided by $F: \tilde{A} \to \tilde{F}^{\tilde{X}}$.

Definition 2.3 FS Super Matrix

Let $\tilde{A} = [\psi_{ij}^{\tilde{A}}, \gamma_{ij}^{\tilde{A}}]$ and $\tilde{B} = [\psi_{ij}^{\tilde{B}}, \gamma_{ij}^{\tilde{B}}] \in FSM$, $\tilde{A}$ is referred FS super Matrix of $\tilde{B}$ reported by $\tilde{A} \supseteq \tilde{B}$ if $\psi_{ij}^{\tilde{A}} \geq \psi_{ij}^{\tilde{B}}$ and $\gamma_{ij}^{\tilde{A}} \leq \gamma_{ij}^{\tilde{B}}$ for everyone i, j.

Definition 2.4 FS Union

Let $\tilde{A} = [\psi_{ij}^{\tilde{A}}, \gamma_{ij}^{\tilde{A}}]$ and $\tilde{B} = [\psi_{ij}^{\tilde{B}}, \gamma_{ij}^{\tilde{B}}] \in FSM$, Union $\tilde{A}$ and $\tilde{B}$ reported by $\tilde{A} \cup \tilde{B}$ is as follows $\tilde{A} \cup \tilde{B} = \max\{\psi_{ij}^{\tilde{A}}, \psi_{ij}^{\tilde{B}}\}, \min\{\gamma_{ij}^{\tilde{A}}, \gamma_{ij}^{\tilde{B}}\}$ for everyone i, j.

Definition 2.5 FS Intersection

Let $\tilde{A} = [\psi_{ij}^{\tilde{A}}, \gamma_{ij}^{\tilde{A}}]$ and $\tilde{B} = [\psi_{ij}^{\tilde{B}}, \gamma_{ij}^{\tilde{B}}] \in FSM$, then Intersection $\tilde{A}$ and $\tilde{B}$ reported by $\tilde{A} \cap \tilde{B}$ is as follows $\tilde{A} \cap \tilde{B} = \min\{\psi_{ij}^{\tilde{A}}, \psi_{ij}^{\tilde{B}}\}$, $\max\{\gamma_{ij}^{\tilde{A}}, \gamma_{ij}^{\tilde{B}}\}$ for everyone i, j.

Definition 2.6 Compositions of a Fuzzy Soft Relation

If$\tilde{A} = [a_{ij}] \in FSM$and $\tilde{B} = [b_{ij}] \in FSM$ so it describes the basic arithmetic of and the following IFS matrices.

$$\tilde{A} + \tilde{B} = \{\max\{\psi_{\tilde{A}}(a_{ij}), \psi_{\tilde{B}}(b_{ij})\}, \min\{\gamma_{\tilde{A}}(a_{ij}), \gamma_{\tilde{B}}(b_{ij})\}\}$$

for everyone i, j.

$$\tilde{A} - \tilde{B} = \{\min\{\psi_{\tilde{A}}(a_{ij}), \psi_{\tilde{B}}(b_{ij})\}, \max\{\gamma_{\tilde{A}}(a_{ij}), \gamma_{\tilde{B}}(b_{ij})\}\}$$

for everyone i, j.

If$\tilde{A} = [a_{ij}] \in FSM$and $\tilde{B} = [b_{ij}] \in FSM$ those maximum minimum compositions of a fuzzy soft relation between $\tilde{A}$ and $\tilde{B}$ would then be described this way

$\tilde{A} * \tilde{B} =$ {maximum {minimum $[\psi_{\tilde{A}}(a_{ij}), \psi_{\tilde{B}}(b_{jk})]\}$, minimum {maximum $[\gamma_{\tilde{A}}(a_{ij}), \gamma_{\tilde{B}}(b_{jk})]\}\}$ for everyone i, j, k.

3. Algorithm of Fuzzy Logic in Educational System by Using Fuzzy Ranking Methodology

Step 1: Assume that the Lesson-wise fuzzy relation is appropriately represented by the fuzzy values in the maximum prod composition.

Step 2: Take membership value into account.

Step 3: Compute all the relativity values.

Step 4: Determine the comparison matrix $\tilde{t} = (\tilde{t}_{ij}) = (\tilde{g}(\tilde{s}_i/s))$ for $\tilde{t}'_i$= minor throw.

Finding the best evaluation process in a matrix comparison is step five.

4. An Application on the Comparison of Ranking Measure

Depending on the results of the official test, certain students have been searched. The 2020–2021 academic year saw the random selection of these pupils. Let H be a list of high schools in Chennai, consisting of High -School$_1$, High -School $_2$, High- School $_3$, High -School $_4$, High-School $_5$ and High -School $_6$.

Be a package of lessons in Tamil, English, mathematics, science, social science, and IT. For each lesson in L throughout the 2020–2021 academic year, high schools' base facts have been designed and are shown in Table 4.1.1.

Step 1: Assume that the top grades were earned in Chennai's cumulative region of high schools from 2020 to 2021.

Table 1: The Lesson-Wise Grade Values

	Tamil	English	Mathematics	Science	Social science	IT
High school $_1$	96	86	75	90	91	88
High school $_2$	91	88	56	89	90	78
High school $_3$	85	81	84	80	88	85
High school $_4$	71	79	67	91	88	70
High school $_5$	70	68	98	75	69	88
High school $_6$	65	89	91	60	78	65

Step 2: Study the value for Grade of Lesson Wise.

Table 2: The Lesson-Wise Fuzzy Relation Grade Value

	Tamil	English	Mathematics	Science	Social science	IT
High school $_1$	0.96	0.86	0.75	0.90	0.91	0.88
High school $_2$	0.91	0.88	0.56	0.89	0.90	0.78
High school $_3$	0.85	0.81	0.84	0.80	0.88	0.85
High school $_4$	0.71	0.79	0.67	0.91	0.88	0.70
High school $_5$	0.70	0.68	0.98	0.75	0.69	0.88
High school $_6$	0.65	0.89	0.91	0.60	0.78	0.65

Pair wise occupation as trails:

$\tilde{g}_{\tilde{h}_1}(\tilde{h}_1)$ =0.96 $\tilde{g}_{\tilde{h}_1}(\tilde{h}_2)$=0.86 $\tilde{g}_{\tilde{h}_1}(\tilde{h}_3)$=0.75 $\tilde{g}_{\tilde{h}_1}(\tilde{h}_4)$ =0.90 $\tilde{g}_{\tilde{h}_1}(\tilde{h}_5)$=0.91 $\tilde{g}_{\tilde{h}_1}(\tilde{h}_6)$=0.88

$\tilde{g}_{\tilde{h}_2}(\tilde{h}_1)$ =0.91 $\tilde{g}_{\tilde{h}_2}(\tilde{h}_2)$=0.88 $\tilde{g}_{\tilde{h}_2}(\tilde{h}_3)$=0.56 $\tilde{g}_{\tilde{h}_2}(\tilde{h}_4)$ =0.89 $\tilde{g}_{\tilde{h}_2}(\tilde{h}_5)$=0.90 $\tilde{g}_{\tilde{h}_2}(\tilde{h}_6)$=0.78

$\tilde{g}_{\tilde{h}_3}(\tilde{h}_1)$ =0.85 $\tilde{g}_{\tilde{h}_3}(\tilde{h}_2)$=0.81 $\tilde{g}_{\tilde{h}_3}(\tilde{h}_3)$=0.84 $\tilde{g}_{\tilde{h}_3}(\tilde{h}_4)$ =0.80 $\tilde{g}_{\tilde{h}_3}(\tilde{h}_5)$=0.88 $\tilde{g}_{\tilde{h}_3}(\tilde{h}_6)$=0.85

$\tilde{g}_{\tilde{h}_4}(\tilde{h}_1)$ =0.71 $\tilde{g}_{\tilde{h}_4}(\tilde{h}_2)$=0.79 $\tilde{g}_{\tilde{h}_4}(\tilde{h}_3)$=0.67 $\tilde{g}_{\tilde{h}_4}(\tilde{h}_4)$ =0.91 $\tilde{g}_{\tilde{h}_4}(\tilde{h}_5)$=0.88 $\tilde{g}_{\tilde{h}_4}(\tilde{h}_6)$=0.70

$\tilde{g}_{\tilde{h}_5}(\tilde{h}_1)$ =0.70 $\tilde{g}_{\tilde{h}_5}(\tilde{h}_2)$=0.68 $\tilde{g}_{\tilde{h}_5}(\tilde{h}_3)$=0.98 $\tilde{g}_{\tilde{h}_5}(\tilde{h}_4)$ =0.75 $\tilde{g}_{\tilde{h}_5}(\tilde{h}_5)$=0.69 $\tilde{g}_{\tilde{h}_5}(\tilde{h}_6)$=.25

$\tilde{g}_{\tilde{h}_6}(\tilde{h}_1)$ =0.65 $\tilde{g}_{\tilde{h}_6}(\tilde{h}_2)$=0.89 $\tilde{g}_{\tilde{h}_6}(\tilde{h}_3)$=0.91 $\tilde{g}_{\tilde{h}_6}(\tilde{h}_4)$ =0.60 $\tilde{g}_{\tilde{h}_6}(\tilde{h}_5)$=0.78 $\tilde{g}_{\tilde{h}_6}(\tilde{h}_6)$=0.65

Using this data as a foundation, create a comparison matrix and choose the overall winner.

Step 3: Ensure that relativity is implemented on

$$\tilde{g}(\tilde{s}/\tilde{h}) = \frac{\tilde{g}_{\tilde{h}}(\tilde{s})}{\max\{\tilde{g}_{\tilde{h}}(\tilde{s}), \tilde{g}_{\tilde{s}}(\tilde{h})\}}$$

To view the ranking and comparison matrix:

$$\tilde{g}(\tilde{h}_1/\tilde{h}_1) = 1 \; \tilde{g}(\tilde{h}_2/\tilde{h}_2) = 1 \; \tilde{g}(\tilde{h}_3/\tilde{h}_3) = 1$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_4) = 1 \quad \tilde{g}(\tilde{h}_5/\tilde{h}_5) = 1 \quad \tilde{g}(\tilde{h}_6/\tilde{h}_6) = 1$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_2) = \frac{\tilde{g}_{\tilde{h}_2}(\tilde{h}_1)}{\max\{\tilde{g}_{\tilde{h}_2}(\tilde{h}_1), \tilde{g}_{\tilde{h}_1}(\tilde{h}_2)\}}$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_2) = \frac{0.91}{\max\{0.91, 0.86\}}$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_2) = \frac{0.91}{0.91} = 1$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_3) = \frac{\tilde{g}_{\tilde{h}_3}(\tilde{h}_1)}{\max\{\tilde{g}_{\tilde{h}_3}(\tilde{h}_1), \tilde{g}_{\tilde{h}_1}(\tilde{h}_3)\}}$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_3) = \frac{0.85}{\max\{0.85, 0.75\}} = 1$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_4) = \frac{\tilde{g}_{\tilde{h}4}(\tilde{h}_1)}{\max\{\tilde{g}_{\tilde{h}4}(\tilde{h}_1), \tilde{g}_{\tilde{h}_1}(\tilde{h}_4)\}}$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_4) = \frac{0.71}{\max\{0.71, 0.90\}}$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_2)=\frac{0.71}{0.90}=0.79$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_5)=\frac{\tilde{g}_{\tilde{h}_5}(\tilde{h}_1)}{\max\{\tilde{g}_{\tilde{h}_5}(\tilde{h}_1),\tilde{g}_{\tilde{h}_1}(\tilde{h}_5)\}}$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_5)=\frac{0.70}{\max\{0.70,0.91\}}$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_5)=\frac{0.70}{0.91}=0.77$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_6)=\frac{\tilde{g}_{\tilde{h}_6}(\tilde{h}_1)}{\max\{\tilde{g}_{\tilde{h}_6}(\tilde{h}_1),\tilde{g}_{\tilde{h}_1}(\tilde{h}_6)\}}$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_5)=\frac{0.65}{\max\{0.65,0.88\}}$$

$$\tilde{g}(\tilde{h}_1/\tilde{h}_6)=\frac{0.65}{0.88}=0.74$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_1)=\frac{\tilde{g}_{\tilde{h}_1}(\tilde{h}_2)}{\max\{\tilde{g}_{\tilde{h}_1}(\tilde{h}_2),\tilde{g}_{\tilde{h}_2}(\tilde{h}_1)\}}$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_1)=\frac{0.86}{\max\{0.86,0.91\}}$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_1)=\frac{0.86}{0.91}=0.95$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_3)=\frac{\tilde{g}_{\tilde{h}_3}(\tilde{h}_2)}{\max\{\tilde{g}_{\tilde{h}_3}(\tilde{h}_2),\tilde{g}_{\tilde{h}_2}(\tilde{h}_3)\}}$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_3)=\frac{0.84}{\max\{0.84,0.56\}}$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_3)=\frac{0.84}{0.84}=1$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_4)=\frac{\tilde{g}_{\tilde{h}_4}(\tilde{h}_2)}{\max\{\tilde{g}_{\tilde{h}_4}(\tilde{h}_2),\tilde{g}_{\tilde{h}_2}(\tilde{h}_4)\}}$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_4)=\frac{0.79}{\max\{0.79,0.89\}}$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_4)=\frac{0.79}{0.89}=0.89$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_5)=\frac{\tilde{g}_{\tilde{h}_5}(\tilde{h}_2)}{\max\{\tilde{g}_{\tilde{h}_5}(\tilde{h}_2),\tilde{g}_{\tilde{h}_2}(\tilde{h}_5)\}}$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_5)=\frac{0.68}{\max\{0.68,0.90\}}$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_5)=\frac{0.68}{0.90}=0.61$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_6)=\frac{\tilde{g}_{\tilde{h}_6}(\tilde{h}_2)}{\max\{\tilde{g}_{\tilde{h}_6}(\tilde{h}_2),\tilde{g}_{\tilde{h}_2}(\tilde{h}_6)\}}$$

$$\tilde{g}(\tilde{h}_2/\tilde{h}_6)=\frac{0.89}{\max\{0.89,0.78\}}=1$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_1)=\frac{\tilde{g}_{\tilde{h}_1}(\tilde{h}_3)}{\max\{\tilde{g}_{\tilde{h}_1}(\tilde{h}_3),\tilde{g}_{\tilde{h}_3}(\tilde{h}_1)\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_1)=\frac{0.75}{\max\{0.75,0.85\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_1)=\frac{0.75}{0.85}=0.88$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_2)=\frac{\tilde{g}_{\tilde{h}_2}(\tilde{h}_3)}{\max\{\tilde{g}_{\tilde{h}_2}(\tilde{h}_3),\tilde{g}_{\tilde{h}_3}(\tilde{h}_2)\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_2)=\frac{0.56}{\max\{0.56,0.81\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_2)=\frac{0.56}{0.56}=1$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_4)=\frac{\tilde{g}_{\tilde{h}_4}(\tilde{h}_3)}{\max\{\tilde{g}_{\tilde{h}_4}(\tilde{h}_3),\tilde{g}_{\tilde{h}_3}(\tilde{h}_4)\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_4)=\frac{0.67}{\max\{0.67,0.80\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_4)=\frac{0.67}{0.80}=0.84$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_5)=\frac{\tilde{g}_{\tilde{h}_5}(\tilde{h}_3)}{\max\{\tilde{g}_{\tilde{h}_5}(\tilde{h}_3),\tilde{g}_{\tilde{h}_3}(\tilde{h}_5)\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_5)=\frac{0.98}{\max\{0.98,0.88\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_5)=\frac{0.98}{0.98}=1$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_6)=\frac{\tilde{g}_{\tilde{h}_6}(\tilde{h}_3)}{\max\{\tilde{g}_{\tilde{h}_6}(\tilde{h}_3),\tilde{g}_{\tilde{h}_3}(\tilde{h}_6)\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_6)=\frac{0.91}{\max\{0.91,0.85\}}$$

$$\tilde{g}(\tilde{h}_3/\tilde{h}_6)=\frac{0.91}{0.91}=1$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_2)=\frac{\tilde{g}_{\tilde{h}_2}(\tilde{h}_4)}{\max\{\tilde{g}_{\tilde{h}_2}(\tilde{h}_4),\tilde{g}_{\tilde{h}_4}(\tilde{h}_2)\}}$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_2)=\frac{0.89}{\max\{0.89,0.79\}}$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_2)=\frac{0.89}{0.89}=1$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_3)=\frac{\tilde{g}_{\tilde{h}_3}(\tilde{h}_4)}{\max\{\tilde{g}_{\tilde{h}_3}(\tilde{h}_4),\tilde{g}_{\tilde{h}_4}(\tilde{h}_3)\}}$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_3)=\frac{0.80}{\max\{0.80,0.67\}}$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_3)=\frac{0.80}{0.80}=1$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_5)=\frac{\tilde{g}_{\tilde{h}5}(\tilde{h}_4)}{\max\{\tilde{g}_{\tilde{h}5}(\tilde{h}_4),\tilde{g}_{\tilde{h}4}(\tilde{h}_5)\}}$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_5)=\frac{0.75}{\max\{0.75,0.88\}}$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_3)=\frac{0.75}{0.88}=0.85$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_6)=\frac{\tilde{g}_{\tilde{h}6}(\tilde{h}_4)}{\max\{\tilde{g}_{\tilde{h}6}(\tilde{h}_4),\tilde{g}_{\tilde{h}4}(\tilde{h}_6)\}}$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_6)=\frac{0.60}{\max\{0.60,0.70\}}$$

$$\tilde{g}(\tilde{h}_4/\tilde{h}_6)=\frac{0.60}{0.70}=0.86$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_1)=\frac{\tilde{g}_{\tilde{h}1}(\tilde{h}_5)}{\max\{\tilde{g}_{\tilde{h}1}(\tilde{h}_5),\tilde{g}_{\tilde{h}5}(\tilde{h}_1)\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_1)=\frac{0.91}{\max\{0.91,0.70\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_1)=\frac{0.60}{0.70}=1$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_2)=\frac{\tilde{g}_{\tilde{h}2}(\tilde{h}_5)}{\max\{\tilde{g}_{\tilde{h}2}(\tilde{h}_5),\tilde{g}_{\tilde{h}5}(\tilde{h}_2)\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_2)=\frac{0.90}{\max\{0.90,0.68\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_2)=\frac{0.90}{0.90}=1$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_3)=\frac{\tilde{g}_{\tilde{h}3}(\tilde{h}_5)}{\max\{\tilde{g}_{\tilde{h}3}(\tilde{h}_5),\tilde{g}_{\tilde{h}5}(\tilde{h}_3)\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_3)=\frac{0.88}{\max\{0.88,0.98\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_3)=\frac{0.88}{0.98}=0.90$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_4)=\frac{\tilde{g}_{\tilde{h}4}(\tilde{h}_5)}{\max\{\tilde{g}_{\tilde{h}4}(\tilde{h}_5),\tilde{g}_{\tilde{h}5}(\tilde{h}_4)\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_4)=\frac{0.88}{\max\{0.88,0.75\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_4)=\frac{0.88}{0.88}=1$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_6)=\frac{\tilde{g}_{\tilde{h}6}(\tilde{h}_5)}{\max\{\tilde{g}_{\tilde{h}6}(\tilde{h}_5),\tilde{g}_{\tilde{h}5}(\tilde{h}_6)\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_6)=\frac{0.78}{\max\{0.78,0.88\}}$$

$$\tilde{g}(\tilde{h}_5/\tilde{h}_6)=\frac{0.78}{0.88}=0.87$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_1)=\frac{\tilde{g}_{\tilde{h}1}(\tilde{h}_6)}{\max\{\tilde{g}_{\tilde{h}1}(\tilde{h}_6),\tilde{g}_{\tilde{h}6}(\tilde{h}_1)\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_1)=\frac{0.88}{\max\{0.88,0.65\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_1)=\frac{0.88}{0.88}=1$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_2)=\frac{\tilde{g}_{\tilde{h}2}(\tilde{h}_6)}{\max\{\tilde{g}_{\tilde{h}2}(\tilde{h}_6),\tilde{g}_{\tilde{h}6}(\tilde{h}_2)\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_2)=\frac{0.78}{\max\{0.78,0.89\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_2)=\frac{0.78}{0.89}=0.88$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_3)=\frac{\tilde{g}_{\tilde{h}3}(\tilde{h}_6)}{\max\{\tilde{g}_{\tilde{h}3}(\tilde{h}_6),\tilde{g}_{\tilde{h}6}(\tilde{h}_3)\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_3)=\frac{0.85}{\max\{0.85,0.91\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_3)=\frac{0.85}{0.91}=0.93$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_4)=\frac{\tilde{g}_{\tilde{h}4}(\tilde{h}_6)}{\max\{\tilde{g}_{\tilde{h}4}(\tilde{h}_6),\tilde{g}_{\tilde{h}6}(\tilde{h}_4)\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_4)=\frac{0.70}{\max\{0.70,0.60\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_4)=\frac{0.70}{0.70}=1$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_5)=\frac{\tilde{g}_{\tilde{h}5}(\tilde{h}_6)}{max\{\tilde{g}_{\tilde{h}5}(\tilde{h}_6),\tilde{g}_{\tilde{h}6}(\tilde{h}_5)\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_5)=\frac{0.88}{\max\{0.88,0.78\}}$$

$$\tilde{g}(\tilde{h}_6/\tilde{h}_5)=\frac{0.88}{0.88}=1$$

Table 3: The Lesson-Wise Fuzzy Relation Score Value

		$\tilde{h}_1$	$\tilde{h}_2$	$\tilde{h}_3$	$\tilde{h}_4$	$\tilde{h}_5$	$\tilde{h}_6$	
	$\tilde{h}_1$	1	1	1	0.79	0.77	0.74	0.74
	$\tilde{h}_2$	0.95	1	1	0.89	0.61	1	0.61
$\tilde{t}'$ =	$\tilde{h}_3$	0.88	1	1	0.84	1	1	0.84
	$\tilde{h}_4$	1	1	1	1	0.85	0.86	0.85
	$\tilde{h}_5$	1	1	0.90	1	1	0.87	0.87
	$\tilde{h}_6$	1	0.88	0.93	1	1	1	0.88

Step 4:

The minimum value for each row is displayed in a separate column to the right of matrix t for comparison. The score is $\tilde{h}_1, \tilde{h}_2, \tilde{h}_3, \tilde{h}_4, \tilde{h}_5\ and\ \tilde{h}_6$.

Hence in High School $_6$ is the best evaluation Process.

5. Results

In this $\tilde{h}_1, \tilde{h}_2, \tilde{h}_3, \tilde{h}_4, \tilde{h}_5$ and $\tilde{h}_6$are taken as important parameter of High- $School_1$, High - School $_2$, High- School $_3$, High- School $_4$, High - School $_5$ and High- School $_{6.}$ finding based on a decision-making problem with operation of fuzzy Ranking methods. This method is used to determination of High School $_6$ is the best evaluation Process with high accuracy.

6. Conclusion and Future Work

Chennai district is Best Evaluation first overall when using max-min composition. The fuzzy decision-making model in which the rank of comparison is used to determine the overall grade (or) gathering of various fuzzy sets If we compare items that are in a position where the rating in valves creates a transitivity inconsistency. A relativity occupation, which is a measure of the association value of selecting one variable over the other, can allow this type of non-transitive ranking. Therefore, the focus of this paper, Fuzzy Ranking Techniques with Applications in Decision Taking, is fuzzy rank.

First, rank approaches have been compared in this essay. It has been noted how the student's certified examination and the preliminary examination relate to one another. This essay might be relevant to any learner. Research may be done on the elements influencing student performance on official exams. Due to variables including student working capacity and an unknowable student's psychology, this paper has only been examined through student preliminary assessments.

The research for the following tables was conducted on ten randomly chosen students for this essay. Furthermore, all pupils might benefit from this study. Exam results for students are not much influenced by their academic performance in school. As a result, it has been considered that their academic performance scores are fixed. Additionally, it is believed that the schools' success scores are set. The socioeconomic level of students, student thinking, school success, educator factor, order of choice, and different cities that students choose are not taken into account when searching the database that is used in this work. Every year, the exam's level of difficulty or simplicity may fluctuate, however this change solely effects the high school base ideas. The outcome won't change as this change has an equal impact on all students.

Following that, the results of the students' preliminary exams and official test scores were compared. First, the scores from the students' preliminary assessments were used to select the high schools in which each student had been accepted [11]. The high schools have thereafter chosen based on the pupils' official test results. The correlation amongst students' certified examination results and their unofficial examination results has been interpreted. Preliminary test results and official test results are comparable. There have been complaints regarding the inconsistent results.

This report suggests that regular, periodic preliminary examinations may be used at the school for the selection and enrollment of high school pupils. The benefits of this new approach, which is what we have accomplished, include being less stressful, less apprehensive for testing, easier to adopt, more affordable, and more beneficial in general. The enrollment of pupils in high schools won't be based on a single test thanks to this method. Additionally, by passing these preliminary exams, the student could make up for any prior exams that were unsuccessful [14][16]. These introductory exams could be used on a regular basis throughout the year, not objective during the year of the evolution to high- school. Both the beginning and the end of the educational process could employ this approach. So, enrolling in high school might be done using this technique. This approach could be used to choose other students by determining the fundamental information and ability data anticipated from the students in pertinent school branches.

This usage of fuzzy logic to choose a high school is particularly beneficial since it identifies the best school for each student based on the distance between them and each school. Results from existing systems and the approach we utilized are compatible. This research has demonstrated that the method might be used to evaluate systems in a variety of ways. This approach is useful for getting more logical outcomes. Utilizing fuzzy ranking logic, an existing assessment organization could be updated. Particularly, applying this submission of fuzzy logic's ranking will produce excellent outcomes for the educational system. Furthermore, by deciding on questions related to a subject, it is possible to better assess the student's level of knowledge.

Similar uses in education have been made in several nations where this logic is not used. These nations will get greater outcomes if this application is deployed there. Additionally, using fuzzy ranking methods, teachers' and students' success might be seen. It will be highly advantageous to use ranking fuzzy logic in the evaluation and decision-making process. This is the first study to orient the students towards their choices for assessing academic accomplishment. This study is actually the first to analyze this application and provide educational advice. With the help of this programme, decisions or preferences can be made without immediate evaluation and with greater accuracy, objectivity, and reason thanks to less strenuous, simpler long-term observation and analysis. Similar uses in education have been made in several nations where this logic is not used. These nations will get greater outcomes if this application is deployed there.

The problems assessment model will be modified as the next stage of this research to make it applicable to a wider range of topics and fields than just this one. Applications of fuzzy logic in education have a lot of promise. The ability of traditional and distant learning to adapt to the demands of students is growing as a result of this technology's ranking with other artificial intelligence techniques. This fact will make it possible for quality education to become more globally accessible and student-centered.

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