FUZZY SOFT INTUITIONISTIC MATRIX IN HUMAN BODY DISEASE

[1] Dr .T. Geetha, [2] A. Usha

[1] Assistant professor, Department of Mathematics, K.N. G.Arts College (Woman), Thanjavur-613007, Tamil Nadu, India.

[2] Assistant professor, Department of Mathematics, PRIST Deemed to be University, Thanjavur-613403, Tamil Nadu, India.

ABSTRACT

The advanced fuzzy soft matrices are being used in many real life situations at present days. Fuzzy soft matrices can solve the problem that can't be solved by ordinary matrices. Main goal of this paper is to describe the Intuitionistic Fuzzy Soft Matrices and find their properties. In this work fever, headache, Encephalitis, drowsiness, mental Uncertainty marked by disorientation is taken as important parameters of Nipah Virus disease diagnosis. Eventually it concludes that the question of making is based on one of Intuitionistic Fuzzy Soft Matrices operations.

Index Terms:

Fuzzy Matrix, Fuzzy Soft Matrices (FSM), Intuitionistic FSM, Nipah Virus diseases diagnosis.

I. INTRODUCTION

There is no opportunity in fuzzy set theory to talk about the impatience in membership grade that occurs in different historicallife situations.The development of Intuitionistic Fuzzy Soft sets overcomes such problem. Here, an additional grade can be used to design indecision and distrust. In something like a design based on the principle for fuzzy sets, It was put into represent a fuzzy relationship.

The IFS set theory has become a fusion for Atanassov's implemented soft sets as well as intuitionistic fuzzy sets. Well into the wide field of science and technology, Matrices plays a crucial role.Although, the classical theory of matrix also fails to solve unpredictable problems. Yong et al introduced and applied a matrix interpretation of a fuzzy soft collection in some choose to make problems. The theory and implementation of FSM has been expanded. Sepsis with the Nipah viral infection is really an emerging domestic disease of south east Asia.

Sub clinically, the above virus is continued to carry in the species Pteropus fruit bats a contestant to which it looks extremely poorly adopted. Ailments prompted by the Nipah virus first were listed during much of the widely accepted outbreaks between pigs and people to Malaysia in 1998-99.

Evidently, the virus was transmitted from bats for pigs all over 1996 as well as subsequently kept in Swine populations.It wasn't really instantaneously reported as the fatality rate was low as well as other pig diseases actually resembles the disease. Nipah virus throughout Malaysia to Singapore while spreading among pig farmers including abattoirs employees, causing Significant, frequently devastating, septicemia in approximately 250 people. Some other general have also been affected, as well as for cats, dogs but also goats. The Malaysian explosions are managed by choosing more about a million pigs for both herbivorous people and animals.

Only in certain elevated risk areas, pig farming has been immediately banned. Although there has been some report of Nipah virus encephalitis on Malaysia since that day, since 2001 human reports have indeed been regularly shocked throughout Bangladesh as well as an accompanying zone of north India. Most of these instances by consuming raw date palm sap, a widely consumed local dainty, tend to be grown directly from bats. As bats visit and drink through heavily defended sap collection sites during night, the sap becomes thought becoming poisoned.Transmission from individual to individual often takes place following real heavily fortified contact. However wide the transmission of Nipah disease among bats was still difficult to handle, furthermore, some areas where no medical cases had ever been exploded, infections RNA as well as seropositive bats also have been recorded.The above virus does seem to have triggered a virulent strain of degenerative disease among animals as well as humans throughout the Philippines we implemented Intuitionistic fuzzy soft matrices throughout this paper and Distinguished various types for intuitionist fuzzy soft matrices as well as some processes.

At last, of applying those kind of matrices in choice making problems, we expanded our method and researched Intuitionistic Fuzzy Soft matrix as well as provided the simple algorithm to evaluate it and, using another notion of Intuitionistic Fuzzy Soft matrices, we were using Intuitionistic Fuzzy Soft Matrices technology of medical diagnosis or otherwise exhibited the method with a the report of Nipah Virus Infection.

II. PRELIMINARIES

Fuzzy soft matrices dependent on the role of reference

In the above chapter, we discuss the concept with FSM, Various types focused onto the relevant fu nction

Definition 2.1

Let $\tilde{X}$ be a collection for entire universe and also let $\tilde{N}$ be a parameter set, Let $I\tilde{F}^{\tilde{X}}$ denote everyone's set intuitionistic fuzzy subsets for $\tilde{X}$. Let $\tilde{A}\subset\tilde{N}$. A pair $(\tilde{F};\tilde{A})$ is called an IFS Set on X, where F is a Maps provided byF : $\tilde{A}\rightarrow I\tilde{F}^{\tilde{X}}$.

Definition2.2

Let $\tilde{X} = \{\tilde{X}_1, \tilde{X}_2, \ldots \tilde{X}_m\}$ be a collection for entire universe and Rbe a collection for parameters given by $\tilde{N} = \{\tilde{r}_1, \tilde{r}_2, \ldots \tilde{r}_n\}$. Therefore the FS set $(F_{\tilde{A}}, \tilde{R})$ also can be shown as just a matrix $\tilde{A} = [a_{ij}^{\tilde{A}}]_{m\times n}$ or just by $[a_{ij}^{\tilde{A}}]$, i=1,2,….,m, j=1,2,…..,n, $[a_{ij}^{\tilde{A}}] = [(\psi_{ij}^{\tilde{A}}, \gamma_{ij}^{\tilde{A}})]$; where $\psi_{ij}^{\tilde{A}}$, and $\gamma_{ij}^{\tilde{A}}$ Represents that role of fuzzy inclusion as well as the fuzzy reference function for the u_i in the fuzzy set $\tilde{F}_A(r_j)$

Example

Suppose this $\tilde{X} = \{P_1, P_2, P_3, P_4, P_5\}$ is a group of students and $\tilde{S} = \{t_1,t_2,t_3,t_4,t_5\}$be a collection for parameters, tends to result, fever, headache, encephalitis as well as,drowsiness, mental confusion loss of balance respectively.Actually attempt mapping all intuitive fuzzy power set subsets through limits set to set. Then intuitionist fuzzy soft set, describes the students skills in identifying which person was impaired in Nipah's advanced level. Consider $\tilde{S} = \{t_1,t_2,t_3,t_4,t_5\}$; then IFS set is

$(\tilde{F}, S)=\{\tilde{F}(t_1)=\{(P_1,0.8,0.1),(P_2,0.4,0.4),(P_3,0.4,0.5),(P_4,0.6,0.1),(P_5,0.7,0.2)\}$

$(\tilde{F}(t_2))=\{(P_1,0.6,0.1),(P_2,0.3,0.6),(P_3,0.5,0.4),(P_4,0.3,0.4),(P_5,0.4,0.4)\}$

$(\tilde{F}(t_3))=\{(P_1,0.4,0.6),(P_2,0.4,0.5),(P_3,0.6,0.3),(P_4,0.8,0.1),(P_5,0.5,0.7)\}$

$(\tilde{F}(t_4))=\{(P_1,0.6,0.1),(P_2,0.7,0.2),(P_3,0.8,0.2),(P_4,0.7,0.2),(P_5,0.6,0.3)\}$

$(\tilde{F}(t_5))=\{(P_1,0.5,0.4),(P_2,0.6,0.1),(P_3,0.6,0.3),(P_4,0.5,0.4),(P_5,0.8,0.2)\}\}$.

The trying to follow IFSM represents such a intuitive fuzzy set:

$$\tilde{A} = \begin{matrix} & t_1 & t_2 & t_3 & t_4 & t_5 \\ p_1 & (0.8,0.1) & (0.6,0.1) & (0.4,0.6) & (0.6,0.1) & (0.5,0.4) \\ p_2 & (0.4,0.4) & (0.3,0.6) & (0.4,0.5) & (0.7,0.2) & (0.6,0.1) \\ p_3 & (0.4,0.5) & (0.5,0.4) & (0.6,0.3) & (0.8,0.2) & (0.6,0.3) \\ p_4 & (0.6,0.1) & (0.3,0.4) & (0.8,0.1) & (0.7,0.2) & (0.5,0.4) \\ p_5 & (0.7,0.2) & (0.4,0.4) & (0.5,0.7) & (0.6,0.3) & (0.8,0.2) \end{matrix}$$

Definition2.3.

Let $\tilde{A}$ = [$\psi_{ij}^{\tilde{A}}$, $\gamma_{ij}^{\tilde{A}}$] ϵ IFSM then $\tilde{A}$ is referred IFS Zero Matrix reported by $\tilde{0}$ = [0,0]if $\psi_{ij}^{\tilde{A}}$=0 and $\gamma_{ij}^{\tilde{A}}$ =0 for everyone i,j

Definition2.4.

An IFS matrix of order m x n that's said to have been an IFS ψ-total Matrix if$\psi_{ij}^{\tilde{A}}$=1 and $\gamma_{ij}^{\tilde{A}}$ =0 for everyone i,j

Definition2.5.

An IFS matrix of order m x n that's said to have been an IFS ψ-total Matrix if $\psi_{ij}^{\tilde{A}}$=0 and $\gamma_{ij}^{\tilde{A}}$ =1 for everyone i,j

Definition2.6.

Let $\tilde{A}$ = [$\psi_{ij}^{\tilde{A}}$, $\gamma_{ij}^{\tilde{A}}$] and $\tilde{B}$ = [$\psi_{ij}^{\tilde{B}}$, $\gamma_{ij}^{\tilde{B}}$] ϵ IFSM , $\tilde{A}$ is referred IFS sub Matrix of B̃ reported by $\tilde{A} \subseteq \tilde{B}$ if$\psi_{ij}^{\tilde{A}} \le \psi_{ij}^{\tilde{B}}$ and $\gamma_{ij}^{\tilde{A}} \ge \gamma_{ij}^{\tilde{B}}$ for everyone i,j.

Definition2.7.

Let $\tilde{A}$ = [$\psi_{ij}^{\tilde{A}}$, $\gamma_{ij}^{\tilde{A}}$] and $\tilde{B}$= [$\psi_{ij}^{\tilde{B}}$, $\gamma_{ij}^{\tilde{B}}$] ϵIFSM , $\tilde{A}$ is referred IFS super Matrix of B̃ reported by $\tilde{A} \supseteq \tilde{B}$ if $\psi_{ij}^{\tilde{A}} \ge \psi_{ij}^{\tilde{B}}$ and $\gamma_{ij}^{\tilde{A}} \le \gamma_{ij}^{\tilde{B}}$ for everyone i,j.

Definition2.8.

Let $\tilde{A}$ = [$\psi_{ij}^{\tilde{A}}$, $\gamma_{ij}^{\tilde{A}}$] and $\tilde{B}$ = [$\psi_{ij}^{\tilde{B}}$, $\gamma_{ij}^{\tilde{B}}$] ϵ IFSM , $\tilde{A}$ that's said to have been B̃ reported by $\tilde{A} = \tilde{B}$ if $\psi_{ij}^{\tilde{A}} = \psi_{ij}^{\tilde{B}}$ and $\gamma_{ij}^{\tilde{A}} = \gamma_{ij}^{\tilde{B}}$ for everyone i,j.

Definition2.9.

Let $\tilde{A}$ = [$\psi_{ij}^{\tilde{A}}$, $\gamma_{ij}^{\tilde{A}}$] and $\tilde{B}$ = [$\psi_{ij}^{\tilde{B}}$, $\gamma_{ij}^{\tilde{B}}$] ϵIFSM, 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.

Definition2.10.

Let $\tilde{A}$ = [$\psi_{ij}^{\tilde{A}}$, $\gamma_{ij}^{\tilde{A}}$] and $\tilde{B}$ = [$\psi_{ij}^{\tilde{B}}$, $\gamma_{ij}^{\tilde{B}}$] ϵIFSM 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.

Definition2.11.

If $\tilde{A}$=[a_{ij}]ϵIFSM and $\tilde{B}$=[b_{ij}]ϵIFSM So we describe 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.

Definition2.12.

If $\tilde{A}$=[a_{ij}]ϵIFSM and $\tilde{B}$=[b_{ij}]ϵIFSM that 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.

Definition2.13.

Let Ã= [$a_{ij}^{\tilde{A}}$] ϵ IFSM, and B̃= [$b_{ij}^{\tilde{B}}$] ϵ IFSM then new Functioning called Average Composition IFSM relation is as follows

$$\tilde{A}\Phi\tilde{B} = \left\{ \text{Max}\left\{ (\psi_{ij}^{\tilde{A}} + \psi_{ij}^{\tilde{B}}) \div 2 \right\} , \text{Min}\left\{ (\gamma_{ij}^{\tilde{A}} + \gamma_{ij}^{\tilde{B}}) \div 2 \right\} \right\}$$

for everyone i and j.

Example

Consider that $\tilde{A} = \begin{pmatrix} (0.8,0.1) & (0.3,0.6) \\ (0.4,0.4) & (0.3,0.4) \end{pmatrix}$ and $\tilde{B} = \begin{pmatrix} (0.7,0.2) & (0.5,0.1) \\ (0.8,0.1) & (0.4,0.4) \end{pmatrix}$ are the two IFSM Therefore , the basic arithmetic, the complement, the maximum minimum composition as well as the average maximum-minimum composition of that same soft matrix associations are

$$\tilde{A} + \tilde{B} = \begin{pmatrix} (0.8,0.1) & (0.5,0.1) \\ (0.8,0.1) & (0.4,0.4) \end{pmatrix}$$

$$\tilde{A} - \tilde{B} = \begin{pmatrix} (0.7,0.2) & (0.3,0.6) \\ (0.4,0.4) & (0.3,0.4) \end{pmatrix}$$

$$\tilde{A} * \tilde{B} = \begin{pmatrix} (0.7,0.2) & (0.5,0.1) \\ (0.4,0.4) & (0.4,0.4) \end{pmatrix}$$

$$\tilde{A}\Phi\tilde{B} = \begin{pmatrix} (0.75,0.15) & (0.65,0.10) \\ (0.55,0.25) & (0.45,0.25) \end{pmatrix}$$

$$\tilde{A}^c = \begin{pmatrix} (0.1,0.8) & (0.6,0.3) \\ (0.4,0.4) & (0.4,0.3) \end{pmatrix}$$

Definition2.14

If Ã= [$a_{ij}^{\tilde{A}}$] ϵ IFSM, and B̃= [$b_{ij}^{\tilde{B}}$] ϵ IFSM and Ã °,B̃ ° are the inclusion for the Ã , B̃ therefore the score matrix for Ã , B̃ is as follows S(Ã , B̃) = $\left(\frac{1}{2}\right)\left[\tilde{P}+\tilde{Q}\right]$, where $\tilde{P}$ is as follows

$\tilde{P}$ = (ψ$_{\tilde{A}\,\Phi\tilde{B}}$ - ϒ$_{\tilde{A}^\circ\,\Phi\,\tilde{B}^\circ}$) and

$\tilde{Q}$ as follows $\tilde{Q}$ = (ϒ$_{\tilde{A}\,\Phi\tilde{B}}$ - ψ$_{\tilde{A}^\circ\,\Phi\,\tilde{B}^\circ}$).

Definition2.15

Nipah disease seems to be a virus that has been spread by species to species. Everything was recognized in 1999 for exacerbating disease to people and animals. It will be given the name during the location where it first spotted in Malaysia.

III. Application of IFSM in human disease

Throughout this part, we present the situation that is based on the human disease IFSM.

3.1Diagnostic test for the infection:

Think in this case a person does have a condition that could have several signs. Out of the symptoms th at we use IFSM in identify the disease.

To use the following algorithm to treat the infection.

ALGORITHM:

***Step* 1**: Creating the IFSM from the collection of symptoms.

***Step* 2:** Using the definition 2.2, to collect IFS complement for Ã °,B̃ °

***Step* 3**: Using the definition 2.3 Calculate IFSM Average Composition Ã ΦB̃ and Ã ° Φ B̃ °

***Step* 4**: To Calculate the matrices P,Q and Collect the matrix of Score S(Ã , B̃) using the Definition 2.4

For Example

Afundamental concept of the IFSMAlgorithm, we therefore apply it as the accompanying Choice-making hypothesis based on IFSM.

IV. Case Study:

Generally speaking, we demonstrated that there are some signs that can be prevalent to more than one disease that put an end to a particular dilemma.Every now and then, if an area is largely damaged by new virus, the physician will face several other problems. Therefore the doctorrecognized the disease starting with that of the patients ' common sig ns.

Let M = { P_1, P_2, P_3, P_4, P_5} be the collection of patients ,

S = { t_1, t_2, t_3, t_4, t_5} be the collection of parameters of signs of Nipah virus.

where

t_1 = fever

t_2 = headache

t_3 =encephalitis

t_4= drowsiness

t_5 = Mental uncertainty marked by disorientation

Let common virus (d1) and earlier stage for Nipah virus (d2) andAdvanced stage to Nipah virus(d3) havebeen the pos sible diseases related with the above signs. Suppose the patients are scrutinized by two Dr. R and Dr. S based on the v ery same set of conditions.

Let F : S → [0, 1] .

We assign the parameter function as follows:

***Step*1:**

The two doctors are constructing Intuitionist Fuzzy soft matrixfuzzy matrices dependent on all these functions as follows:

Suppose IFSS (F, S) is distributed over P, where F is a Maps provided by F: S → IF^P , $\tilde{F}_B$:S→ $\tilde{F}(P)$,

An accurate description of just the patient's side effect effects throughout the hospital.

$$\tilde{A} = \begin{array}{c} \\ p_1 \\ p_2 \\ p_3 \\ p_4 \\ p_5 \end{array} \begin{array}{c} \begin{array}{ccccc} e_1 & e_2 & e_3 & e_4 & e_5 \end{array} \\ \begin{pmatrix} (0.8,0.1) & (0.6,0.1) & (0.4,0.6) & (0.6,0.1) & (0.5,0.4) \\ (0.4,0.4) & (0.3,0.6) & (0.4,0.5) & (0.7,0.2) & (0.6,0.1) \\ (0.4,0.5) & (0.5,0.4) & (0.6,0.3) & (0.8,0.2) & (0.6,0.3) \\ (0.6,0.1) & (0.3,0.4) & (0.8,0.1) & (0.7,0.2) & (0.5,0.4) \\ (0.7,0.2) & (0.4,0.4) & (0.5,0.7) & (0.6,0.3) & (0.8,0.2) \end{pmatrix} \end{array}$$

And

Suppose IFSS (F,D) over S ,where G is a Maps provided by G: D → IF^s , Provides an estimate definition for IFS medical experience for side- effect diseases including their effects for Nipah virus.

$$\tilde{B} = \begin{array}{c} \\ t_1 \\ t_2 \\ t_3 \\ t_4 \\ t_5 \end{array} \begin{array}{c} \begin{array}{ccc} d_1 & d_2 & d_3 \end{array} \\ \begin{pmatrix} (0.7,0.2) & (0.5,0.1) & (0.4,0.5) \\ (0.8,0.4) & (0.4,0.5) & (0.6,0.3) \\ (0.8,0.1) & (0.4,0.4) & (0.4,0.3) \\ (0.5,0.3) & (0.6,0.2) & (0.7,0.1) \\ (0.6,0.3) & (0.8,0.4) & (0.4,0.5) \end{pmatrix} \end{array}$$

***Step* 2:** Using the definition 2.2, Collect IFSM complement matrices $\tilde{A}^c$,$\tilde{B}^c$

$$\tilde{A}^c = \begin{array}{c} \\ p_1 \\ p_2 \\ p_3 \\ p_4 \\ p_5 \end{array} \begin{array}{c} \begin{array}{ccccc} t_1 & t_2 & t_3 & t_4 & t_5 \end{array} \\ \begin{pmatrix} (0.1,0.8) & (0.1,0.6) & (0.6,0.4) & (0.1,0.6) & (0.4,0.5) \\ (0.4,0.4) & (0.6,0.3) & (0.5,0.4) & (0.2,0.7) & (0.1,0.6) \\ (0.5,0.4) & (0.4,0.5) & (0.3,0.6) & (0.2,0.8) & (0.3,0.6) \\ (0.1,0.6) & (0.4,0.3) & (0.1,0.8) & (0.2,0.7) & (0.4,0.5) \\ (0.2,0.7) & (0.4,0.4) & (0.7,0.5) & (0.3,0.6) & (0.2,0.8) \end{pmatrix} \end{array}$$

$$\tilde{B}^c = \begin{array}{c} \\ t_1 \\ t_2 \\ t_3 \\ t_4 \\ t_5 \end{array} \begin{array}{c} \begin{array}{ccc} d_1 & d_2 & d_3 \end{array} \\ \begin{pmatrix} (0.2,0.7) & (0.1,0.5) & (0.5,0.4) \\ (0.4,0.8) & (0.5,0.4) & (0.3,0.6) \\ (0.1,0.8) & (0.4,0.4) & (0.3,0.4) \\ (0.3,0.5) & (0.2,0.6) & (0.1,0.7) \\ (0.3,0.6) & (0.4,0.8) & (0.5,0.4) \end{pmatrix} \end{array}$$

***Step* 3:** Using definition 2.3 Calculate the Average Composition IFSM $\tilde{A}\Phi\tilde{B}$ and $\tilde{A}^c\Phi\tilde{B}^c$

$$\tilde{A}\Phi\tilde{B} = \begin{array}{c} \\ p_1 \\ p_2 \\ p_3 \\ p_4 \\ p_5 \end{array} \begin{array}{c} \begin{array}{ccc} d_1 & d_2 & d_3 \end{array} \\ \begin{pmatrix} (0.75,0.15) & (0.65,0.10) & (0.65,0.10) \\ (0.60,0.20) & (0.70,0.20) & (0.70,0.15) \\ (0.70,0.20) & (0.70,0.20) & (0.75,0.15) \\ (0.80,0.10) & (0.65,0.10) & (0.70,0.15) \\ (0.70,0.20) & (0.80,0.15) & (0.65,0.20) \end{pmatrix} \end{array}.$$

$$\tilde{A}^c\Phi\tilde{B}^c = \begin{array}{c} \\ p_1 \\ p_2 \\ p_3 \\ p_4 \\ p_5 \end{array} \begin{array}{c} \begin{array}{ccc} d_1 & d_2 & d_3 \end{array} \\ \begin{pmatrix} (0.35,0.55) & (0.50,0.40) & (0.45,0.40) \\ (0.50,0.55) & (0.55,0.35) & (0.45,0.40) \\ (0.40,0.55) & (0.45,0.45) & (0.50,0.40) \\ (0.40,0.55) & (0.45,0.35) & (0.45,0.45) \\ (0.40,0.55) & (0.55,0.40) & (0.50,0.45) \end{pmatrix} \end{array}$$

***Step* 4**: To Calculate $\tilde{P}$, $\tilde{Q}$ and Collect the matrix Score $\tilde{S}$ ($\tilde{A}$, $\tilde{B}$) using the definition 2.4

$$\tilde{P} = \begin{array}{c} \\ p_1 \\ p_2 \\ p_3 \\ p_4 \\ p_5 \end{array} \begin{array}{c} \quad d_1 \quad\; d_2 \quad\; d_3 \\ \begin{pmatrix} (0.20) & (0.25) & (0.25) \\ (0.05) & (0.35) & (0.30) \\ (0.15) & (0.25) & (0.35) \\ (0.25) & (0.30) & (0.25) \\ (0.15) & (0.40) & (0.25) \end{pmatrix} \end{array}$$

$$\tilde{Q} = \begin{array}{c} \\ p_1 \\ p_2 \\ p_3 \\ p_4 \\ p_5 \end{array} \begin{array}{c} \quad d_1 \quad\; d_2 \quad\; d_3 \\ \begin{pmatrix} (0.20) & (0.40) & (0.35) \\ (0.30) & (0.35) & (0.30) \\ (0.20) & (0.25) & (0.35) \\ (0.30) & (0.35) & (0.30) \\ (0.20) & (0.40) & (0.30) \end{pmatrix} \end{array}$$

$$\tilde{P} + \tilde{Q} = \begin{array}{c} \\ p_1 \\ p_2 \\ p_3 \\ p_4 \\ p_5 \end{array} \begin{array}{c} \quad d_1 \quad\; d_2 \quad\; d_3 \\ \begin{pmatrix} (0.20) & (0.25) & (0.25) \\ (0.05) & (0.35) & (0.30) \\ (0.15) & (0.25) & (0.35) \\ (0.25) & (0.30) & (0.25) \\ (0.15) & (0.40) & (0.25) \end{pmatrix} \end{array} + \begin{array}{c} \\ p_1 \\ p_2 \\ p_3 \\ p_4 \\ p_5 \end{array} \begin{array}{c} \quad d_1 \quad\; d_2 \quad\; d_3 \\ \begin{pmatrix} (0.20) & (0.40) & (0.35) \\ (0.30) & (0.35) & (0.30) \\ (0.20) & (0.25) & (0.35) \\ (0.30) & (0.35) & (0.30) \\ (0.20) & (0.40) & (0.30) \end{pmatrix} \end{array}$$

$$\tilde{S} = \frac{1}{2}(\tilde{P} + \tilde{Q})$$

$$\tilde{S} = \begin{array}{c} \\ p_1 \\ p_2 \\ p_3 \\ p_4 \\ p_5 \end{array} \begin{array}{c} \quad d_1 \quad\; d_2 \quad\; d_3 \\ \begin{pmatrix} (0.20) & (0.325) & (0.30) \\ (0.18) & (0.35) & (0.30) \\ (0.18) & (0.25) & (0.35) \\ (0.28) & (0.325) & (0.28) \\ (0.18) & (0.40) & (0.275) \end{pmatrix} \end{array}$$

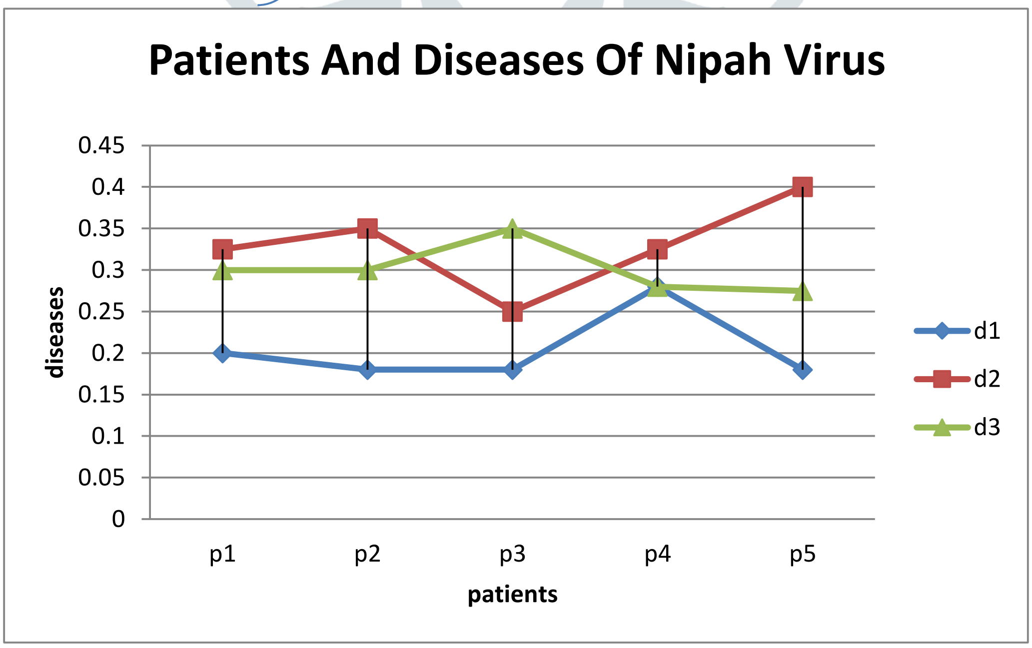

Figure 1 –Relation of Patients and diseases

It is suggest that the issue is more severeP_1,P_2,P_4, P_5 form the diseases earlier stage of Nipah virus (d_2), P_3 are suffering from the disease advanced stage of Nipah virus (d_3). The relation between Patients and diseases is shown in figure 1.

V. CONCLUSION

Throughout this paper, including IFSMatrices, we present the algorithm for solve this problem for diagnosis for human body diseases such as fever headache, encephalitis, drowsiness and mental uncertainty. The suggested solution may be used in the future, a number for multiple criteria choice-making problems that deal with concern. It may be applied efficiently in many different areas especially in Physician Sector.

References

[1] D. Molodt., "Soft set theory-first results," CAM *with A_s*, 37, 4–5, 1999, 19-31

[2] L.A.Z(1965), Fuzzy sets, *IAC*, 8, 3,1965, 338-353.

[3] P. K. M, R. B.,& A. R. R, "Fuzzy soft sets,"*JFMs*, 9, 3, 2001, 589–602.

[4] P. K. M, A. R. R, & R. B., "On intuitionistic fuzzy sof t sets," *JFM*, 12, 3, 2004, 669–683.

[5] Daowu. P & Duogian.M, "From soft sets to information systems," of *Proceedings of the IEEE* ICGC, 2, 2005, 617-621.

[6] Degang.C, ,Tsang, Daniel. S. Y, & X. Wang, "The parameterization reduction of soft sets and its applications," CAMA, 49, 5–6, 2005, 757-763.

[7] Yong. Y and ChenliJi, "Fuzzy soft matrices and their applications," of AIACI, 7002,2011, 618–627.

[8] ManashJyoti Borah, TridivJyotiNeog, and Dusmanta Kumar Sut, "Fuzzy sof t matrix theory and its decision making," IJMER, 2,2 2012,121-127.

[9] *TridivJyoti Neog* and D.K.S, "An application of fuzzy soft sets in decision making problems using fuzzy soft matrices," IJMA, 2, 2012, 2258-2263.

[10] B. C and P. K. D, "On Fuzzy Soft Matrix Theory," JAAM, 2, 2010, 71–83.

[11] B. C and P. K. D, "On Fuzzy Soft Sets," IJMA, 2, 2011, 1-6.

[12] B. C and P. K. D, "Some results of IFS matrix theory," PRL, AASR, 3, 2012, 412–423.

[13] P. R and P. D "IFS matrix theory and its application in decision making," IJERT, 2, 4, 2013, 1100–1111.

[14] P. S and C. V. S, "An application of intuitionistic fuzzy technique in medical diagnosis," AJBAS, 8, 2014, 392–395.

[15] B.A and A.K,On Fuzzy Soft Sets, AFS, 2009, 1-6.

[16] A.R.M and M.K, An application of Interval valued fuzzy matrice in Medical Diagnosis, IJMA, 5,2011,1791-1802.