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DOMINATION IN COMPLETE INTUITIONISTIC FUZZY INCIDENCE GRAPHS WITH APPLICATION

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Abstract. In this exploration article, the possibility of Complete Intuitionistic Fuzzy Incidence Graphs (CIFIG). Degree cardinality, strong and weak domination for complete intuitionistic fuzzy incidence graphs is characterized. The author clarifies these ideas with some outline models. Besides, a use of domination for Complete Intuitionistic Fuzzy Incidence Graph (CIFIG) to choose the best treatment facility accessible hospital is talked about for the delineation.

AMS Subject Classification: 05C12, 03E72, 03F55

KEYWORDS: Complete Intuitionistic Fuzzy Incidence Graph, Degree Cardinality, Strong Intuitionistic Fuzzy Incidence Domination Number(SIFIDN), Weak Intuitionistic Fuzzy Incidence Domination Number(WIFIDN).

1. Introduction

Zadeh[28] [30] [31] [32] have initiated fuzzy sets. Parvathi and Karunambigai[13] have initiated the idea ofIntuitionistic Fuzzy Graphs (IFGs). Gani and Begum [5] talked about the extension of fuzzy graphs. Products in IFGs were discussed by Sahoo & Pal [17].Sahoo and Pal [18,19] studied some types of fuzzy graphs. Sahoo et al [21] initatied new ideas in intuitionistic fuzzy graphs. Kalaiarasi and Mahalakshmi have also expressed fuzzy strong graphs [8].Shanmugavadivu and Gopinath, suggested non homogeneous ternary five degrees equation [24]. Shanmugavadivu and Gopinath, have also expressed on the homogeneous five degree equation [25], Bozhenyuk et al[2] has talked about dominating set and Mapreduce Methodology for Elliptical Curve Discrete Logarithmic Problems [29].

Ore and Berge introduced the concept of domination in 1962. Cockayne and Hedetniemi have further studied about domination in graphs[6]. Somasundaram and Somasundaram have initiated domination in fuzzy graphs by making use of effective edges[23]. Xavior et al. [27] has talked about domination in fuzzy graphs but differently. Dharmalingam and Nithya have also expressed domination parameters for fuzzy graphs[3]. Equitable domination number for fuzzy graphs was introduced by Revathi and Harinarayaman in [16]. Sarala and Kavitha have also expressed (1,2)-domination for fuzzy graphs[22]. Gani and Chandrasekaran have talked about strong arcs[12]. Sunitha and Manjusha have also expressed strong domination [26]. Kalaiarasi and Mahalakshmi have also expressedfuzzy inventory EOQ optimization mathematical model [9]. Kalaiarasi and Gopinath suggested fuzzy inventory order EOQ model with machine learning [10]. Fuzzy Incidence Graphs (FIGS) discussed by Dinesh [4]. Mordeson talked about incidence cuts in FIGS [11].Priyadharshini et al.[18] have also expressed a fuzzy MCDM approach for measuring the business impact of employee selection [15].

The design of this articlein section 2 provides some preliminary results which are required to understand the remaining part of the article. In section 3 CIFIG is defined. In section 4 conveys meaning domination in CIFIG. In section 5 we examine Strong Intuitionistic Fuzzy Incidence Dominating Set (SIFIDS) and SIFIDN and Weak Intuitionistic Fuzzy Incidence Dominating Set (WIFIDS) and WIFIDN. In section 6 application of intuitionistic fuzzy incidence domination number is given.

2. Preliminaries

Definition 2.1[17]

An intuitionistic fuzzy graph is of the form $G_{IF} = (V_{IF}, E_{IF}, \rho_{IF}, \phi_{IF})$ where $\rho_{IF} = (\rho_1, \rho_2), \phi_{IF} = (\phi_1, \phi_2)$ and $V_{IF} = \{x_0, x_1, x_2, \ldots x_n\}$ such that $\rho_1 : V_{IF} \to [0,1]$ and $\rho_2 : V_{IF} \to [0,1]$ represent the degree of membership and non membership of the vertex $x_{11} \in V_{IF}$, respectively and $0 \le \rho_1 + \rho_2 \le 1$ for each $x_{ii} \in V_{IF} (i = 1,2,\ldots n)$, $\phi_1 : V_{IF} \times V_{IF} \to [0,1]$ and $\phi_2 : V_{IF} \times V_{IF} \to [0,1]$; $\phi_1(x_{11}, x_{22})$ and $\phi_2(x_{11}, x_{22})$ show the degree of membership and non membership of the edge (x_{11}, x_{22}), respectively, such that $\phi_1(x_{11}, x_{22}) \le \min\{\rho_1(x_{11}), \rho_1(x_{22})\}$ and $\phi_2(x_{11}, x_{22}) \le \max\{\rho_2(x_{11}), \rho_2(x_{22})\}$, $0 \le \phi_1(x_{11}, x_{22}) + \phi_2(x_{11}, x_{22}) \le 1$ for every (x_{11}, x_{22}).

Definition 2.2[4]

Assume $G_I = (V_I, E_I)$ is a graph. Then, $G_I = (V_I, E_I, I_I)$ is named as an incidence graph, where $I_I \subseteq V_I \times E_I$.

Definition 2.3[4]

Assume $G_{FS} = (V_{FS}, E_{FS})$ is a graph, μ_{FS} is a fuzzy subset of V_{FS}, and γ_{FS} is a fuzzy subset of $V_{FS} \times V_{FS}$. Let ψ_{FS} be a fuzzy subset of $V_{FS} \times E_{FS}$. If $\psi_{FS}(w_{11}, w_{11}w_{22}) \le \min\{\mu_{FS}(w_{11}), \gamma_{FS}(w_{11}w_{22})\}$ for every $w_{11} \in V_{FS}, w_{11}w_{22} \in E_{FS}$, then ψ_{FS} is a fuzzy incidence of G_{FS}.

Definition 2.4[4]

Assume G_I is a graph and (μ_I, γ_I) is a fuzzy sub graph of G_I. If ψ_I is a fuzzy incidence of G_I, then $G_I = (\mu_I, \gamma_I, \psi_I)$ is named as FIG of G_I.

Definition 2.5[7]

An intuitionistic fuzzy incidence graph(IFIG) is of the form $G_{FI}=(V_{FI},E_{FI},I_{FI},\rho_{FI},\phi_{FI},\chi_{FI})$ where $\rho_{FI}=(\rho_1,\rho_2),\ \phi_{FI}=(\phi_1,\phi_2),\chi_{FI}=(\chi_1,\chi_2)$ and $V_{FI}=\{x_0,x_1,x_2,...x_n\}$ such that $\rho_1:V_{FI}\to[0,1]$ and $\rho_2:V_{FI}\to[0,1]$ represent the degree of membership and non membership of the vertex $x_{11}\in V_{FI}$, respectively and $0\le\rho_1+\rho_2\le1$ for each $x_{ii}\in V_{FI}(i=1,2,...n)$, $\phi_1:V_{FI}\times V_{FI}\to[0,1]$ and $\phi_2:V_{FI}\times V_{FI}\to[0,1]$; $\phi_1(x_{11},x_{22})$ and $\phi_2(x_{11},x_{22})$ show the degree of membership and non membership of the edge (x_{11},x_{22}), respectively, such that $\phi_1(x_{11},x_{22})\le\min\{\rho_1(x_{11}),\rho_1(x_{22})\}$ and $\phi_2(x_{11},x_{22})\le\max\{\rho_2(x_{11}),\rho_2(x_{22})\}$, $0\le\phi_1(x_{11},x_{22})+\phi_2(x_{11},x_{22})\le1$ for every (x_{11},x_{22}). $\chi_1:V_{FI}\times E_{FI}\to[0,1]$ and $\chi_2:V_{FI}\times E_{FI}\to[0,1]$; $\chi_1(x_{11},x_{11}x_{22})$ and $\chi_2(x_{11},x_{11}x_{22})$ show the degree of membership and non membership of the incidence pair respectively, such that $\chi_1(x_{11},x_{11}x_{22})\le\min\{\rho_1(x_{11}),\phi_1(x_{11}x_{22})\}$ and $\chi_2(x_{11},x_{11}x_{22})\le\max\{\rho_2(x_{11}),\phi_2(x_{11}x_{22})\}$, $0\le\chi_1(x_{11},x_{11}x_{22})+\chi_2(x_{11},x_{11}x_{22})\le1$ for every $(x_{11},x_{11}x_{22})$.

3. Complete Intuitionistic Fuzzy Incidence Graph

Definition 3.1

The support of IFIG $G_{FI}=(R,S,T)$ is supp (G_{FI}) ={supp(R),supp(S),supp(T)} so that supp(R)= $\{x_{11}/\rho_1(x_{11})>0,\rho_2(x_{11})>0\}$

supp(S)= $\{x_{11}x_{22}/\phi_1(x_{11}x_{22})>0,\phi_2(x_{11}x_{22})>0\}$

supp(T)= $\{(x_{11},x_{11}x_{22})/\chi_1(x_{11},x_{11}x_{22})>0,\chi_2(x_{11},x_{11}x_{22})>0\}$

ρ^*,ϕ^* and χ^* are representing support of ρ,ϕ and χ respectively.

Definition 3.2

A IFIG is said to be complete intuitionistic fuzzy incidence graphif

$\chi_1(x_{11},x_{11}x_{22})=\min\{\rho_1(x_{11}),\phi_1(x_{11}x_{22})\}$ and

$\chi_2(x_{11},x_{11}x_{22})=\max\{\rho_2(x_{11}),\phi_2(x_{11}x_{22})\}$, for each

$\chi_1(x_{11},x_{11}x_{22}),\chi_2(x_{11},x_{11}x_{22})\in\chi^*$.

Remark 3.3

Every CIFIG is a IFIG but not conversely.

Definition 3.4

Assume $G_{IFI}=(\rho_{IFI},\phi_{IFI},\chi_{IFI})$ is a CIFIG. Then $O(G_{IFI})=\sum_{x_{11}\neq x_{22},x_{11}x_{22}\in V_{IFI}}\left(\frac{1+\chi_1(x_{11},x_{11}x_{22})-\chi_2(x_{11},x_{11}x_{22})}{2}\right)$ is called order of G_{IFI} and $S(G_{IFI})=\sum_{x_{11}x_{22}\in\phi^*}\left(\frac{1+\phi_1(x_{11}x_{22})-\phi_2(x_{11}x_{22})}{2}\right)$ is called size of G_{IFI}

4. Domination in CIFIGs

Definition 4.1

Definition 4.1

A vertex x_{11} in aCIFIG dominates to vertex x_{22} if $\chi_1(x_{11},x_{11}x_{22})=\min\{\rho_1(x_{11}),\phi_1(x_{11}x_{22})\}$ and $\chi_2(x_{11},x_{11}x_{22})=\max\{\rho_2(x_{11}),\phi_2(x_{11}x_{22})\}$.

Remark 4.2

For any $x_{11},x_{22}\in V_{IFI}$, if x_{11} dominates x_{22} then x_{22} also dominates x_{11}.

Definition 4.3

A set $M_{IFI}\subseteq V_{IFI}$ is a intuitionistic fuzzy incidence dominating set (IFIDS) if each nodes in $V_{IFI}-M_{IFI}$ is dominated by atleast one node in M_{IFI}.

Definition 4.4

The lowest intuitionistic fuzzy incidence cardinality of a IFIDSis uttered as the intuitionistic fuzzy incidence domination number and it is represented by $\gamma_{IFI}(G_{IFI})$ or γ_{IFI}.

Definition 4.5

Consider $G_{IFI}=(V_{IFI},E_{IFI},I_{IFI},\rho_{IFI},\phi_{IFI},\chi_{IFI})$ is an CIFIG and $x_{11}\in V_{IFI}$ then its degree is expressed by $d_{G_{IFI}(x_{11})}=\left(d_{1G_{IFI}}(x_{11}),d_{2G_{IFI}}(x_{11})\right)$ and represented by $d_{1G_{IFI}}(x_{11})=\sum_{x_{11}\neq x_{22},}(x_{11},x_{11}x_{22})\in I_{IFI}$ and $d_{2G_{IFI}}(x_{11})=\sum_{x_{11}\neq x_{22},}(x_{11},x_{11}x_{22})\in I_{IFI}$

5. Strong and Weak Domination in CIFIGs

Definition 5.1

Let G_{IFI} be aCIFIG. Then the degree cardinality of $d_{G_{IFI}}(x_{11})$ is representedto be $\left|d_{G_{IFI}}(x_{11})\right| = \frac{1 + d_{1G_{IFI}}(x_{11}) - d_{2G_{IFI}}(x_{11})}{2}$. The lowest degree cardinality of G_{IFI} is defined by $\delta(G_{IFI}) = \min\{ d_{G_{IFI}}(x_{11}) / x_{11} \in V_{IFI}\}$ and highest degree cardinality of G_{IFI} is defined by $\Delta(G_{IFI}) = \max\{ d_{G_{IFI}}(x_{11}) / x_{11} \in V_{IFI}\}$.

Definition 5.2

Assume G_{IFI} is a CIFIG and let x_{11} and x_{22} be the nodes of G_{IFI}. Then x_{11} strongly dominates x_{22} or x_{22} weakly dominates x_{11} if $d_i(x_{11}) \geq d_i(x_{22})$ and $\chi_1(x_{11}, x_{11}x_{22}) = \min\{\rho_1(x_{11}), \phi_1(x_{11}x_{22})\}$, $\chi_2(x_{11}, x_{11}x_{22}) = \max\{\rho_2(x_{11}), \phi_2(x_{11}x_{22})\}$.

We call x_{22} strongly dominates x_{11} or x_{11} weakly dominates x_{22} if $d_i(x_{22}) \geq d_i(x_{11})$ and $\chi_1(x_{22}, x_{11}x_{22}) = \min\{\rho_1(x_{22}), \phi_1(x_{11}x_{22})\}$, $\chi_2(x_{22}, x_{11}x_{22}) = \max\{\rho_2(x_{22}), \phi_2(x_{11}x_{22})\}$

Definition 5.3

A set $S_{IFI} \subseteq V_{IFI}$ is a SIFIDS if every vertex in $V_{IFI} - S_{IFI}$ is strongly fuzzy incidence dominated by atleast one vertex in S_{IFI}. Similarly, S_{IFI} is labeled a WIFIDS if every vertex in $V_{IFI} - S_{IFI}$ is weakly fuzzy incidence dominated by at least one vertex in S_{IFI}.

Definition 5.4

The lowest intuitionistic fuzzy incidence cardinality of a SIFIDS is uttered as the SIFIDN and it is represented by $\gamma_{SIFI}(G_{IFI})$ or γ_{SIFI} and the lowest intuitionistic fuzzy incidence cardinality of a WIFIDS is uttered as the WIFIDN and it is represented by $\gamma_{WIFI}(G_{IFI})$ or γ_{WIFI}

Example 5.5

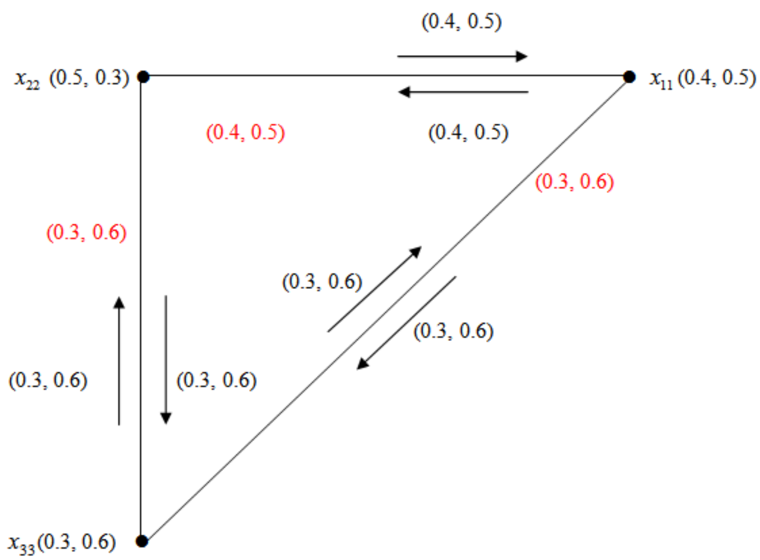

Fig: 1CIFIG with $\gamma_{SIFI}=0.5$ and $\gamma_{WIFI}=0.4$

Assume $G_{IFI}=(\rho_{IFI},\phi_{IFI},\chi_{IFI})$ is anCIFIG given in above figure having $V_{IFI}=(x_{11},x_{22},x_{33})$ and

$\rho(x_{11})=(0.4,0.5)$, $\rho(x_{22})=(0.5,0.3)$, $\rho(x_{33})=(0.3,0.6)$,

$\phi(x_{11},x_{22})=(0.4,0.5)$, $\phi(x_{22},x_{33})=(0.3,0.6)$, $\phi(x_{33},x_{11})=(0.3,0.6)$

$\chi(x_{11},x_{11}x_{22})=(0.4,0.5)$, $\chi(x_{22},x_{11}x_{22})=(0.4,0.5)$,

$\chi(x_{22},x_{22}x_{33})=(0.3,0.6)$, $\chi(x_{33},x_{22}x_{33})=(0.3,0.6)$,

$\chi(x_{11},x_{11}x_{33})=(0.3,0.6)$, $\chi(x_{33},x_{11}x_{33})=(0.3,0.6)$

Assume $D_{IFI}=\{x_{33}\}$. We have $V_{IFI}-D_{IFI}=\{x_{11},x_{22}\}$. Here x_{33} weakly fuzzy incidence dominates x_{11},x_{22} because $d_{G_{IFI}}(x_{33})=0.2$ is less than the $d_{G_{IFI}}$ of all the remaining vertices. That is $d_{G_{IFI}}(x_{11})=0.3$, $d_{G_{IFI}}(x_{33})=0.3$. There is no other weak intuitionistic fuzzy incidence dominating sets. Thus the only weak intuitionistic fuzzy incidence dominating set is $D_{IFI}=\{x_{33}\}$. Therefore $\gamma_{WIFI}=0.4$. We have strong IFIDS is $D_{IFI}=\{x_{11}\}$ with $\gamma_{SIFI}=0.5$.

Theorem 5.6

For anyCIFIG with $\chi_1(x_{11},x_{11}x_{22})=\min\{\rho_1(x_{11}),\phi_1(x_{11}x_{22})\}$ and $\chi_2(x_{11},x_{11}x_{22})=\max\{\rho_2(x_{11}),\phi_2(x_{11}x_{22})\}$ for all $x_{11}\in V_{IFI}$, $x_{11}x_{22}\in E_{IVI}$, then

(i) $\gamma_{SIFI} = \gamma_{WIFI}$

(ii) $\gamma_{SIFI} > \gamma_{WIFI}$

Proof

Let $G_{IFI} = (\rho_{IFI}, \phi_{IFI}, \chi_{IFI})$ be a CIFIG with $\chi_1(x_{11}, x_{11}x_{22}) = \min\{\rho_1(x_{11}), \phi_1(x_{11}x_{22})\}$ and $\chi_2(x_{11}, x_{11}x_{22}) = \max\{\rho_2(x_{11}), \phi_2(x_{11}x_{22})\}$. Assume for all $x_{11} \in V_{IFI}$, $(\rho_1(x_{11}), \rho_2(x_{11}))$ have samevalue. Since G_{IFI} is CIFIG with $\phi_1(x_{11}x_{22}) = \min\{\rho_1(x_{11}), \rho_1(x_{22})\}$ and $\phi_2(x_{11}x_{22}) = \max\{\rho_2(x_{11}), \rho_2(x_{22})\}$ for all $x_{11}, x_{22} \in V_{IFI}$ and $\chi_1(x_{11}, x_{11}x_{22}) = \min\{\rho_1(x_{11}), \phi_1(x_{11}x_{22})\}$ and $\chi_2(x_{11}, x_{11}x_{22}) = \max\{\rho_2(x_{11}), \phi_2(x_{11}x_{22})\}$ for all $x_{11} \in V_{IFI}$, $x_{11}x_{22} \in E_{IVI}$. Thus every $x_{11} \in V_{IFI}$ is SIFIDS as well as WIFIDS. Therefore $\gamma_{WIFI} = \gamma_{SIFI}$.

Assume for all $x_{11} \in V_{IFI}$, $(\rho_1(x_{11}), \rho_2(x_{11}))$ have different value . In a CIFIG with $d_{G_{IFI}}(x_{11}) \geq d_{G_{IFI}}(x_{22})$ from all the nodes one of them strongly dominates all the remaining nodes, if it is smallest among all the nodes then the IFIDS with that node is called WIFIDN, that is $\gamma_{WIFI} = (\rho_1(x_{11}), \rho_2(x_{11}))$ with $d_{G_{IFI}}(x_{11}) \leq d_{G_{IFI}}(x_{22})$ for all $x_{11}, x_{22} \in V_{IFI}$ and $\chi_1(x_{11}, x_{11}x_{22}) = \min\{\rho_1(x_{11}), \phi_1(x_{11}x_{22})\}$ and $\chi_2(x_{11}, x_{11}x_{22}) = \max\{\rho_2(x_{11}), \phi_2(x_{11}x_{22})\}$ for all $x_{11} \in V_{IFI}$, $x_{11}x_{22} \in E_{IVI}$. Certainly, the strong IFIDS has a node set other than the that node set. This implies $\gamma_{SIFI} > \gamma_{WIFI}$.

Theorem 5.7

For a CIFIG, the below inequalities are true.

(i) $\gamma_{IFI} \leq \gamma_{SIFI} \leq O(G_{IFI}) - \max imum\, d_{G_{IFI}}\ of\ G_{IFI}$.

(ii) $\gamma_{IFI} \leq \gamma_{WIFI} \leq O(G_{IFI}) - \min imum\, d_{G_{IFI}}\ of\ G_{IFI}$.

Proof

(i) From definition 5.2, 5.3 and 5.4 we have $\gamma_{IFI} \leq \gamma_{SIFI}$ (1)

We know $O(G_{IFI})$ =the sum of the incidence pair ofCIFIG.

Also $O(G_{IFI})-$ not including the maximum $d_{G_{IFI}}$ ofCIFIG

$= O(G_{IFI})-\Delta(G_{IFI})$ (2)

From equation (1) and (2)

$\gamma_{IFI} \leq \gamma_{SIFI} \leq O(G_{IFI}) - \max imum\, d_{G_{IFI}}\ of\ G_{IFI}$

(ii) From definition 5.2, 5.3 and 5.4 domination number γ_{IFI} ofCIFIG is less than or equal to the γ_{WFII} ofCIFIG, because the vertices of WIFIDS M_{IFI}, it weakly dominates any one of the vertices of $V_{IFI}-M_{IFI}$.

Therefore $\gamma_{WIFI}(G_{IFI}) \geq \gamma_{IFI}(G_{IFI})$ (3)

Also $O(G_{IFI})-$ not including the minimum $d_{G_{IFI}}$ of CIFIG

$= O(G_{IFI})-\delta(G_{IFI})$ (4)

From equation (3) and (4), we get

$\gamma_{IFI} \leq \gamma_{WIFI} \leq O(G_{IFI}) - \min imum\, d_{G_{IFI}}\ of\ G_{IFI}$.

6. Application

Here, incorporate an every day life model. Assume there are five multispeciality clinics are working (24 hours) in a city for giving crisis treatment to individuals. Here in our examinationwe are not referencing the original names of these clinics in this manner think about the clinics h_{11}, h_{22}, h_{33}, h_{44} and h_{55}. InCIFIGs, the vertices show the clinics and edges show the contract conditions between the clinics to share the facilities. The incidence pairs show the transferring of patients from one clinic to another because of the lack of resources.The vertex $h_{11}(0.4,0.6)$ means that it has 40% of the necessary facilities for treatment and unfortunately lacks 60% of the equipment. The edge $h_{11}h_{22}(0.14,0.86)$ shows that there is only 14% of the interaction and relationship between the two clinics, and due to financial issues, there is 86% on the conflict between them.IFIDS ruling arrangements of the graph is the arrangement of clinics which give the crisis treatment autonomously. Along these lines, we can save the time of patients and conquer the long going of patients by giving the couple of offices to the remainder of the clinics.

Assume $G_{IFI} = (V_{IFI}, E_{IFI}, I_{IFI}, \rho_{IFI}, \phi_{IFI}, \chi_{IFI})$ is a CIFIG show in figure having $V_{IFI} = (h_{11}, h_{22}, h_{33}, h_{44}, h_{55})$ and $\rho(h_{11}) = (0.4,0.6)$, $\rho(h_{22}) = (0.14,0.86)$, $\rho(h_{33}) = (0.52,0.48)$,

$\rho(h_{44})=(0.24,0.76)$, $\rho(h_{55})=(0.24,0.76)$, $\phi(h_{11},h_{22})=(0.14,0.86)$,
$\phi(h_{11},h_{33})=(0.4,0.6)$, $\phi(h_{11},h_{44})=(0.24,0.76)$,
$\phi(h_{33},h_{44})=(0.24,0.76)$, $\phi(h_{44},h_{55})=(0.24,0.76)$
$\chi(h_{11},h_{11}h_{22})=(0.14,0.86)$, $\chi(h_{22},h_{11}h_{22})=(0.14,0.86)$,
$\chi(h_{11},h_{11}h_{33})=(0.4,0.6)$, $\chi(h_{33},h_{11}h_{33})=(0.4,0.6)$,
$\chi(h_{11},h_{11}h_{44})=(0.24,0.76)$, $\chi(h_{44},h_{11}h_{44})=(0.24,0.76)$,
$\chi(h_{33},h_{33}h_{44})=(0.24,0.76)$, $\chi(h_{44},h_{33}h_{44})=(0.24,0.76)$,
$\chi(h_{44},h_{44}h_{55})=(0.24,0.76)$, $\chi(h_{55},h_{44}h_{55})=(0.24,0.76)$

Example 6.1

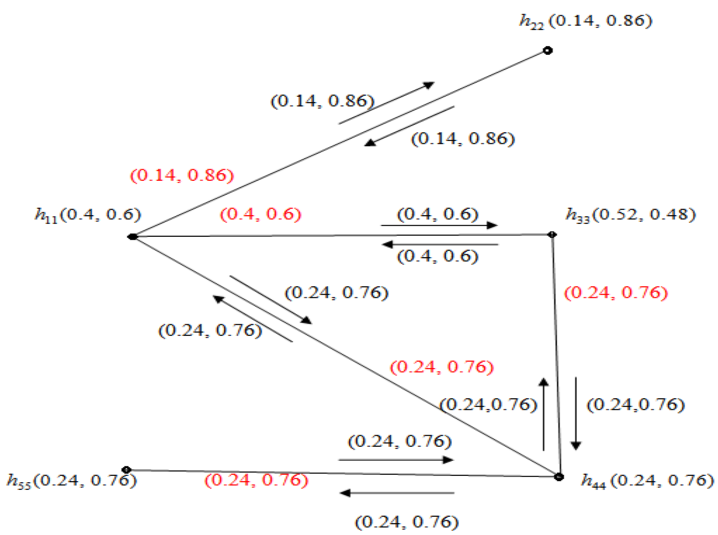

Fig: 2CIFIG with $\gamma_{IFI}=0.38$

In figure having intuitionistic fuzzy incidence dominating set are $D_{IFI}=\{h_{22},h_{44}\}$ and $\gamma_{IFI}=0.38$.

This shows that patients can visit any one of the clinics from this set. The rest of the clinics upgrade their facilities to provide better treatment to the people.

9. Conclusion

The idea of domination in CIFIGs is imperative from religious just as an applications perspective. In this paper, the possibility of complete intuitionistic fuzzy incidence graph, strong and weak intuitionistic fuzzy incidence dominating set and strong and weak intuitionistic fuzzy incidence domination number is talked about. Further work on these thoughts will be accounted for in impending papers.

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