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Age Group of Men Medical Representatives Affected by Stress in Pharmaceutical Company in Thanjavur and Kumbakonam City of Tamil Nadu Using Intuitionistic Fuzzy Soft Matrix

Research Article

R. Rathika[1]*, S. Subramanian[1] and R. Balakumar[1]

1 Department of Mathematics, PRIST University, Thanjavur, Tamilnadu, India.

Abstract: The Paper Comprises of a case study which is done on men medical representatives in the age group of 25 to 58 years. Stress is a most persisting factor in professional and modern life. It is a natural and unavoidable feature of life experienced at one time or another by the vast majority of those engaged in professional work. Our objective of this paper to find out the peak age of men medical representatives gets stress in Thanjavur and Kumbakonam workers. For that we have studied the job stress among men workers. It has been classified into seven symptoms as don't sleep well, Muscle pain, frequent headache, Restlessness, Hair loss, Stomach pain, Wake-up tried. The concept of Intuitionistic fuzzy soft Matrix is applied to identify the age group of men medical representatives (based on age) worst affected.

MSC: 03E72, 03F55.

Keywords: Soft Set, Fuzzy soft set, Intuitionistic Fuzzy soft set, Intuitionistic fuzzy soft Matrix.

1. Introduction

Stress is a most persisting factor in professional and modern life. The concept of stress was first introduced by the late Canadian-Hungarian medical scientist Hans Selye (1907-1983). It's an equivocal word, for some it means excitement and challenge (good stress or eustress) for many others it reflects an undesirable state of chronic fatigue, worry frustration and inability to cope (bad stress or distress). He looked it as a "nonspecific" response of the organism to any demand for change. Stress can be further refined as the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressure of the situation. Signs of stress can be observed by people's behavior, peculiarly when changes occur in their behavior [1]. Acute responses to stress has been noticed in many diverse areas like feeling (e.g. anxiety, depression, irritability, fatigue), behavior (e.g. unmotivated, tearful, being withdrawn, aggressive), thinking (e.g. difficulties in problem solving and concentration) or physical responses (e.g. headache, nausea, palpitation). If stress persist for long time it can lead to the changes in the neuroendocrine, cardiovascular, autonomic and immunological functioning, which is further leading to mental and physical ill health (e.g. heart disease, depression, anxiety) [2].

In the fuzzy set theory there were no scopes to think about the hesitation in the membership degree, which arise in various real life situations. To overcome these situations Atanassov introduced theory of intuitionistic fuzzy set in 1986 as a

* *E-mail: rathikarita@gmail.com*

generalization of fuzzy set.Most of the problems in engineering, medical science, economics, environments etc have various uncertainties. Molodtsov [5] initiated the concept of soft set theory as a mathematical tool for dealing with uncertainties. Research works on soft set theory are progressing rapidly. Maji et al. [6] defined several operations on soft set theory. Combining soft sets with fuzzy sets and intuitionistic fuzzy sets, Feng et al. and Maji et al. [6] defined fuzzy soft sets and intuitionistic fuzzy soft sets which are rich potentials for solving decision making problems.Matrices play an important role in the broad area of science and engineering. The classical matrix theory cannot solve the problems involving various types of uncertainties. In [4] Yang et al, initiated a matrix representation of a fuzzy soft set and applied it in certain decision making problems. The concept of fuzzy soft matrix theory was studied by Borah et al. In [3], Chetia et al. and in [7] Rajarajeswari et al. defined intuitionistic fuzzy soft matrix.Again it is well known that the matrices are important tools to model/study different mathematical problems specially in linear algebra. Due to huge applications of imprecise data in the above mentioned areas, hence are motivated to study the different matrices containing these data. Soft set is also one of the interesting and popular subject, where different types of decision making problem can be solved. So attempt has been made to study the decision making problem by using intuitionistic fuzzy soft aggregation operator. Das and Kar [6] proposed an algorithmic approach for group decision making based on IF soft set. The authors [6] have used cardinality of IF soft set as a novel concept for assigning confident weight to the set of experts. Cagman and Enginogh [3, 4] pioneered the concept of soft matrix to represent a soft set. Mao et al. presented the concept of intuitionistic fuzzy soft matrix(IFSM) and applied it in group decision making problem.

1.1. Men Medical Representatives Stress

Pharmaceutical companies were categorized into multinational, Indian and local propaganda companies. Twenty medical representatives from multinational, 100 from Indian and 107 from local companies were included in the study. Thus for the feasibility of study total hundred medical representatives were interviewed. It was observed that medical representatives from various divisions of companies participate in the study. All the subjects were educationally well qualified. Investigator requested the Medical representatives to fill in the self-administered questionnaire at the time of session. The questionnaire was pretested and then used. Completion of the questionnaire was voluntary. The time taken by the Medical representatives for filling in the questionnaire was around 25 minutes. The questionnaire consists of four parts. First part is all about the socio-demographic characteristics. Second part tried to assess the job induced stress with the help of Work-Stress questionnaire 11 and the third part was to capture some of the factors responsible for the job induced stress among Medical representatives and lastly the fourth part tried to explore the some physical and emotional responses. The work-stress questionnaire consist of 15 statement with five alternative responses e.g. 5 for ‘nearly all the time’, 4 for ‘often’, 3 for ‘sometime’, 2 for ‘seldom’, 1 for ‘never’. Total score on this scale is considered for the assessment of work stress (minimum and maximum scores were 15 and 75 respectively). More the stress on this scale indicates more stress. Factors for job induced stress capture by the small set of close ended questions. The physical and emotional responses explored by the list of 30 sign and symptoms, the subject had to tick these symptoms according to their understanding. These sign and symptoms selected from the list of 50 common signs and symptoms of stress given by The American Institute of Stress 12.

1.2. Description of the Problem

In this paper, we analyzed the stress problem faced by men medical representatives in Thanjavur and Kumbakonam districts. Stress leads to rapid changes throughout the body. We give an effective technique on the collected data. From our interviews we saw the men medical representatives who are affected by the stress problem which were mainly suffered from tension and mental problems. For that we have interviewed and recorded 207 men medical representatives in different ages in Thanjavur

and Kumbakonam districts. From our interview we recognized about 90% of men medical representatives are affected by these symptoms. Most of the men medical representatives in Thanjavur and Kumbakonam districts can adopt the same problems. Thus our study can be adapted to this field in Thanjavur and Kumbakonam districts. The major part of studies is the health problems faced by the men medical representatives was affected by the stress problem. Under the following diseases who are mostly suffered by seven symptoms i.e., M_1-Don't sleep, M_2-Muscle Pain, M_3-Frequent head ache, M_4-Restlessness, M_5-Hair Loss, M_6-Stomach Pain, M_7-Wake up tired due to heavy work which are taken as the column-wise of the initial raw data matrix. The age groups in years 20-25, 26-31, 32-37, 38-42, 43-47, 48-53 and 54-58.

2. Basic Definitions

In this section we briefly review some basic definitions related to fuzzy soft set, intuitionistic fuzzy soft sets, soft sets and intuitionistic fuzzy soft matrix their generalizations, which will be used in the rest of the paper.

Definition 2.1. *Let U be an initial universe set and E be a set of parameters. Let $P(U)$ denotes the power Set of U. Let $A \subseteq E$. A pair (F_A, E) is called a soft set over U, where F_A is a mapping given by : $E \to P(U)$ such that $F_A(e) = \varphi$ if $e \notin A$. Here F_A is called approximate function of the soft set (F_A, E). The set $F_A(e)$ is called e-approximate value set which consist of related objects of the parameter $e \in E$. In other words, a soft set over U is a parameterized family of subsets of the universe U.*

Example 2.2. *Let $U = \{e_1, e_2, e_3, e_4\}$ be a set of four pens and $E = \{e_1, e_2, e_3, e_4\} = \{black(e_1), red(e_2), blue(e_3), green(e_4)\}$ be a set of parameters. If $A = \{e_1, e_2, e_3, e_4\} \subseteq E$. Let $F_A(e_1) = \{u_1, u_2, u_3, u_4\}$ and $F_A(e_2) = \{u_1, u_4\}$, $F_A(e_3) = \{u_1, u_3, u_4\}$, $F_A(e_4) = \{u_4\}$ then we write the soft set $(F_A, E) = \{(e_1, \{u_1, u_2, u_3, u_4\}), (e_2, \{u_1, u_4\}), (e_3, \{u_1, u_3, u_4\}), (e_4, \{u_4\})\}$ over U which describe the "colour of the pens" which Mr. A is going to buy. We may represent the fuzzy soft set in the following form :*

U	e_1	e_2	e_3	e_4
u_1	1	1	1	0
u_2	1	0	0	0
u_3	1	0	1	0
u_4	1	1	1	1

Definition 2.3. *Let U be an initial universe, E be the set of all parameters and $A \subseteq E$. A pair (F_A, E) is called a fuzzy soft set over U where F_A is a mapping given by, $F_A : E \to P(U)$ such that $F_A(e) = \varphi$ if $e \notin A$, where φ is a null fuzzy set and $\tilde{P}(U)$ denotes the collection of all subsets of U.*

Example 2.4. *Consider the Example 2.2, here we cannot express with only two real numbers 0 and 1, we can characterized it by a membership function instead of crisp number 0 and 1, which associate with each element a real number in the interval [0,1]. Then $(F_A, E) = \{F_A(e_1) = \{(u_1, 0.8), (u_2, 0.6), (u_3, 0.5), (u_4, 0.2)\}$, $F_A(e_2) = \{(u1, 0.5), (u_4, 0.2)\}$, $F_A(e_3) = \{(u_1, 0.6), (u_3, 0.4)(u_4, 0.8)\}$, $F_A(e_4) = \{(u_4, 0.4)\}$ is the fuzzy soft set representing the "colour of the pens" Which Mr. A is going to buy. We may represent the fuzzy soft set in the following form:*

U	e_1	e_2	e_3	e_4
u_1	0.8	0.5	0.6	0
u_2	0.6	0	0	0
u_3	0.5	0.0	0.4	0
u_4	0.2	0.2	0.8	0.4

Definition 2.5. *Let (F_A, E) be fuzzy soft set over U. Then a subset of $U \times E$ is uniquely defined by $R_A = \{(u, e) : e \in A, u \in F_A(e)\}$, which is called relation form of (F_A, E). The characteristic function of R_A is written by $\mu_{RA} : U \times E \to [0, 1]$, where $\mu_{RA}(u, e) \in [0, 1]$ is the membership value of $u \in U$ for each $e \in U$. If $\mu_{ij} = \mu_{RA}(u_i, e_j)$, we can define a matrix*

$$[\mu_{ij}]_{m\times n} = \begin{pmatrix} \mu_{11} & \mu_{12} & \cdots & \mu_{1n} \\ \mu_{21} & \mu_{22} & \cdots & \mu_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ \mu_{m1} & \mu_{m2} & \cdots & \mu_{mn} \end{pmatrix}$$

Which is called an $m \times n$ soft matrix of the soft set (F_A, E) over U. Therefore we can say that a fuzzy soft set (F_A, E) is uniquely characterized by the matrix $[\mu_{ij}]_{m\times n}$ and both concepts are interchangeable.

Example 2.6. *Assume that $U = \{u_1, u_2, u_3, u_4, u_5, u_6\}$ is a universal set and $E = \{e_1, e_2, e_3, e_4\}$ is a set of all parameters. If $A \subseteq E = \{e_1, e_2, e_3, e_4\}$ and $F_A(e_1) = \{(u_1, .7), (u_2, .6), (u_3, .8), (u_4, .2), (u_5, .7), (u_6, .8)\}$, $F_A(e_2) = \{(u_1, .5), (u_3, .8), (u_4, .1), (u_5, .2), (u_6, .9)\}$, $F_A(e_3) = \{(u_1, .5), (u_2, .7), (u_4, .5), (u_5, .6), (u_6, .7)\}$, $F_A(e_4) = \{(u_1, .9), (u_6, .1)\}$. Then the fuzzy soft set (F_A, E) is a parameterized family $\{F_A(e_1), F_A(e_2), F_A(e_3), F_A(e_4)\}$ of all fuzzy sets over U. Hence the fuzzy soft matrix $[\mu_{ij}]$ can be written as*

$$[\mu_{ij}] = \begin{bmatrix} 0.7 & 0.5 & 0.5 & 0.9 \\ 0.6 & 0.0 & 0.7 & 0.0 \\ 0.8 & 0.8 & 0.0 & 0.0 \\ 0.2 & 0.1 & 0.5 & 0.0 \\ 0.7 & 0.2 & 0.6 & 0.0 \\ 0.8 & 0.9 & 0.7 & 0.1 \end{bmatrix}$$

Definition 2.7. *A fuzzy soft matrix of order $1 \times n$ i.e., with a single row is called a row-fuzzy soft Matrix.*

Definition 2.8. *A fuzzy soft matrix of order $m \times 1$ i.e., with a single column is called a column-fuzzy soft matrix.*

3. Intuitionistic Fuzzy Soft Matrix Theory

3.1. Intuitionistic Fuzzy Soft Set (IFSS)

Let U be an initial universe, E be the set of parameters and $A \subseteq E$. A pair (F_A, E) is called an intuitionistic fuzzy soft set (IFSS) over U, where F_A is a mapping given by $F_A : E \to I^U$, where I^U denotes the collection of all intuitionistic fuzzy subsets of U.

Example 3.1. *Suppose that $U = \{u_1, u_2, u_3, u_4\}$ be a set of four shirts and $E = \{white(e_1), blue(e_2), green(e_3)\}$ be a set of parameters. If $A = \{e_1, e_2\} \in E$. Let $F_A(e1) = \{(u_1, 0.3, 0.7), (u_2, 0.8, 0.1), (u_3, 0.4, 0.2), (u_4, 0.6, 0.2)\}$, $F_A(e_2) = \{(u_1, 0.8, 0.1), (u_2, 0.9, 0.1), (u_3, 0.4, 0.5), (u_4, 0.2, 0.3)\}$ then we write intuitionistic fuzzy soft set is $(F_A, E) = \{F_A(e_1) = \{(u_1, 0.3, 0.7), (u_2, 0.8, 0.1), (u_3, 0.4, 0.2), (u_4, 0.6, 0.2)\}$, $F_A(e_2) = \{(u_1, 0.8, 0.1), (u_2, 0.9, 0.1), (u_3, 0.4, 0.5), (u_4, 0.2, 0.3)\}\}$. We would represent this intuitionistic fuzzy soft set in matrix form as*

$$\begin{bmatrix} (.3, .7) & (.8, .1) & (.0, .0) \\ (.8, .1) & (.9, .1) & (.0, .0) \\ (.4, .2) & (.4, .5) & (.0, .0) \end{bmatrix}$$

3.2. Intuitionistic Fuzzy Soft Matrix (IFSM) [5]

Let U be an initial universe, E be the set of parameters and $A \subseteq E$. Let (F_A, E) be an intuitionistic fuzzy soft set (IFSS) over U. Then a subset of $U \times E$ is uniquely defined by $R_A = \{(u, e) : e \in A, u \in F_A(e)\}$ which is called relation form of (F_A, E). The membership and non-membership functions of are written by $\mu_{RA} : U \times E \to [0, 1]$ and $\gamma_{RA} : U \times E \to [0, 1]$ where $\mu_{RA} : (u, e) \in [0, 1]$ and $\gamma_{RA} : (u, e) \in [0, 1]$ are the membership value and nonmembership value of $u \in U$ for each $e \in E$. If $(u_{ij}, v) = (\mu_{RA}(u_i, e_j), \gamma_{RA}(u_i, e_j))$ we can define a

$$[(u_{ij}, v)]_{m\times n} = \begin{pmatrix} (\mu_{11}, \nu_{11}) & (\mu_{12}, \nu_{12}) & \cdots & (\mu_{1n}, \nu_{1n}) \\ (\mu_{21}, \nu_{21}) & (\mu_{22}, \nu_{22}) & \cdots & (\mu_{2n}, \nu_{2n}) \\ \vdots & \vdots & \ddots & \vdots \\ (\mu_{m1}, \nu_{m1}) & (\mu_{m2}, \nu_{m2}) & \cdots & (\mu_{mn}, \nu_{mn}) \end{pmatrix}$$

Which is called an m×n IFSM of the IFSS (F_A, E) over U. Therefore, we can say that IFSS (F_A, E) is uniquely characterized by the matrix $[(\mu_{ij}, v_{ij})]_{m\times n}$ and both concepts are interchangeable .The set of all $m \times n$ IFS matrices will be denoted by $\text{IFSM}_{m\times n}$.

Example 3.2. *Let* $U = \{u_1, u_2, u_3, u_4, u_5\}$ *is a universal set and* $E = \{e_1, e_2, e_3, e_4, e_5\}$, *is a set of parameters. If* $A = \{e_1, e_3, e_4, e_5\} \subseteq E$ *and* $F_A(e_1) = \{(u_1, .8, .4), (u_2, .8, .1), (u_3, .5, .5), (u_4, .5, .4), (u_5, .2, .1)\}$, $F_A(e_3) = \{(u_1, .4, .6), (u_3, .2, .2), (u_4, 1, 0), (u_5, .6, .2)\}$, $F_A(e_4) = \{(u_1, .6, .2), (u_2, 1, 0), (u_3, .8, .2), (u_4, .6, .3), (u_5, .7, .3)\}$, $F_A(e_5) = \{(u_1, .7, .8), (u_2, 1, 0), (u_3, .6, .5), (u_4, .5, .3), (u_5, .9, .2)\}\}$. *Then the IFS set* (F_A, E) *is a parameterized family* $\{F_A(e_1), F_A(e_2), F_A(e_3), F_A(e_4)\}$ *of all IFS sets over U. Hence IFSM* $[(\mu_{ij}, \gamma_{ij})]$ *can be written as*

$$[(\mu_{ij}, \gamma_{ij})] = \begin{bmatrix} (.8, .4) & (0, 0) & (.4, .6) & (.6, .2) & (.7, .8) \\ (.8, .1) & (0, 0) & (0, 0) & (1, 0) & (1, 0) \\ (.5, .5) & (0, 0) & (.2, .2) & (.8, .2) & (.6, .5) \\ (.5, .4) & (0, 0) & (1, 0) & (.6, .3) & (.5, .3) \\ (.2, .1) & (0, 0) & (.6, .2) & (.7, .3) & (.9, .2) \end{bmatrix}$$

Definition 3.3 (Intuitionistic Fuzzy Soft Set Complement Matrix)**.** *Let* $A = [a] = [a_{ij}]$ $IFSM_{m\times n}$, *where* $a_{ij} = (\mu_j(c_i), v_j(c_i))$ *for all i, j. Then* A^C *IFSM is called a Intuitionistic Fuzzy Soft Complement Matrix if* $A^C = [d_{ij}]_{m\times n}$, *where* $d_{ij} = (v_j(c), \mu_j(c))$ *for all i, j.*

Definition 3.4 (Addition and Subtraction of Intuitionistic Fuzzy Soft Matrix)**.** *If* $A = [a_{ij}]$ $IFSM_{m\times n}$, $B = [b_{ij}]$ $IFSM_{m\times n}$, *then we define the addition and subtraction of Intuitionistic Fuzzy Soft Matrices of A and B as;*

$$A + B = \{\max[\mu_A(a_{ij}), \mu_B(b_{ij})], \min[v_A(a_{ij}), v_B(b_{ij})]\} \ \forall \ i, j A - B \quad = \{\min[\mu_A(a_{ij}), \mu_B(b_{ij})], \max[v_A(a_{ij}), v_B(b_{ij})]\} \ \forall \ i, j.$$

Definition 3.5 (Product of Intuitionistic Fuzzy Soft Matrix)**.** *If* $A = [a_{ij}] \in IFSM$, $B = [b_{ij}] \in IFSM$, *then we define* $A * B$, *multiplication of A and B as*

$$A * B = [c_{ij}]_{m\times p} = \{\max \min[(\mu_A(a_{ij}), \mu_B(b_{ij})], \min \max[v_A(a_{ij}), v_B(b_{ij})\} \ \forall \ i, j.$$

Definition 3.6 (Value Matrix)**.** *Let* $\tilde{A} = [(\mu_{ij}^A, v_{ij}^A)] \in IFSM_{m\times n}$. *Then* $\tilde{A}$ *is said to be value of intuitionistic fuzzy soft matrix denoted by* $V(\tilde{A})$ *and is defined as* $V(\tilde{A}) = [(\mu_{ij}^A - v_{ij}^A)]$ *if* $i = 1, 2, 3, \ldots, m$, $j = 1, 2, 3, \ldots, n$ *for all i and j.*

Definition 3.7 (Score Matrix). *If* $A = [(\mu_{ij}^A, v_{ij}^A)] \in IFSM_{m\times n}$, $B = [(\mu_{ij}^B, v_{ij}^B)] \in IFSM_{m\times n}$. *Then* A *and* B *is said to be intuitionistic fuzzy soft score matrix denoted by* $S(A,B)$ *and is defined as* $S(A,B) = V(\tilde{A}) - V(B)$.

Definition 3.8 (Total Score). *If* $\tilde{A} = [(\mu_{ij}^A, v_{ij}^A)] \in IFSM_{m\times n}$, $B = [(\mu_{ij}^B, v_{ij}^B)] \in IFSM_{m\times n}$. *Let the corresponding value matrix be* $V(\tilde{A}), V(B)$ *and their score matrix is* $S_(A,B)$. *Then the total score for each* u_i *in* U *is* $S_i = (V(\tilde{A}) - V(B))$; $\sum_{j=1}^{n} = [\mu_{ij}^A - v_{ij}^A - (\mu_{ij}^A - v_i)]$.

4. Methodology Algorithm for Decision Making Method by Using Intuitionistic Fuzzy Soft Matrices

Algorithm for decision making method by using Intuitionistic fuzzy soft matrices.

Step 1 : Input the Intuitionistic fuzzy soft set (F,c) and Obtain the Intuitionistic fuzzy soft Matrix A corresponding to (F, c) respectively.

Step 2 : Write the Intuitionistic fuzzy soft complement Matrix A^c.

Step 3 : Compute $V(A)$, $A(A^c)$ and $S(A, A^c)$.

Step 4 : Compute the total score S_i for each u_i in U.

Step 5 : Find u_i for which max. Incase max S_i occur for more than one value, then repeat the process by reassessing the parameters. Incase max max S_i occurs for more than one value, then repeat the process by reassessing the parameters.

4.1. Application of Intuitionistic Fuzzy Soft Matrix

The respondents were grouped into 7 categories based on the age which forms the alternative set (or) Universal set $U = u_1, u_2, u_3, u_4, u_5, u_6, u_7$ and the categories of problem were used to form the criteria set $C = c_1, c_2, c_3, c_4, c_5, c_6, c_7$. Group of Respondents (Universal set U) (Based on age of men medical representatives) years u_1-20 to 25 years, u_2-26 to 31 years, u_3-32 to 37 years, u_4-38 to 42 years, $_5$-43 to 47years, u_6-48 to 53 years, and u_7-54 to 58years.
Criteria Set C: seven symptoms i.e., M_1-Don't sleep, M_2-Muscle Pain, M_3-Frequent head ache, M_4-Restlessness, M_5-Hair Loss, M_6 -Stomach Pain, M_7-Wake up tired due to heavy work of men medical representatives. In order to collect data an interview schedule was developed, pre tested and administered to the respondents. A sample of 200 respondents (28 to 30 in each group) was selected adopting convenient sampling technique. The Corresponding intuitionistic fuzzy soft set is

$$(F,m) = \{F(m_1) = \{(u_1, 0.5, 0.4), (u_2, 0.1, 0.6), (u_3, 0.6, 0.5), (u_4, 0.4, 0.7), (u_5, 0.1, 0.8), (u_6 0.3, 0.3), (u_7, 0.6, 0.5)\},$$
$$F(m_2) = \{(u_1, 0.1, 0.6), (u_2, 0.3, 0.3), (u_3, 0.6, 0.4), (u_4, 0.5, 0.4), (u_5, 0.1, 0.2), (u_6, 0.7, 0.5), (u_7, 0.4, 0.7)\},$$
$$F(m_3) = \{(u_1, 0.2, 0.), (u_2, 0.2, 0.6), (u_3, 0.1, 0.5), (u_4, 0.6, 0.2), (u_5, 0.3, 0.3), (u_6, 0.7, 0.2), (u_7, 0.5, 0.5)\},$$
$$F(m_4) = \{(u_1, 0.1, 0.8), (u_2, 0.3, 0.7), (u_3, 0.2, 0.8), (u_4, 0.4, 0.4), (u_5, 0.3, 0.7), (u_6, 0.1, 0.5), (u_7, 0.6, 0.2)\},$$
$$F(m_5) = \{(u_1, 0.2, 0.7), (u_2, 0.3, 0.4), (u_3, 0.5, 0.5), (u_4, 0.5, 0.5), (u_5, 0.2, 0.7), (u_6, 0.4, 0.5), (u_7, 0.3, 0.5)\},$$
$$F(m_6) = \{(u_1, 0.3, 0.4), (u_2, 0.1, 0.8), (u_3, 0.3, 0.8), (u_4, 0.7, 0.1), (u_5, 0.4, 0.3), (u_6, 0.6, 0.7), (u_7, 0.3, 0.6)\},$$
$$F(m_7) = \{(u_1, 0.3, 0.7), (u_2, 0.4, 0.5), (u_3, 0.2, 0.6), (u_4, 0.1, 0.6), (u_5, 0.3, 0.4), (u_6, 0.2, 0.2), (u_7, 0.2, 0.6)\}\}$$

The Intuitionistic fuzzy soft matrix

$$A = \begin{array}{c} \\ u_1 \\ u_2 \\ u_3 \\ u_4 \\ u_5 \\ u_6 \\ u_7 \end{array} \begin{array}{c} \begin{array}{ccccccc} m_1 & m_2 & m_3 & m_4 & m_5 & m_6 & m_7 \end{array} \\ \begin{bmatrix} (0.5,0.4) & (0.1,0.6) & (0.6,0.5) & (0.4,0.7) & (0.1,0.8) & (0.3,0.3) & (0.6,0.5) \\ (0.1,0.6) & (0.3,0.3) & (0.6,0.4) & (0.5,0.4) & (0.1,0.2) & (0.7,0.5) & (0.4,0.7) \\ (0.2,0.2) & (0.2,0.6) & (0.1,0.5) & (0.6,0.2) & (0.3,0.3) & (0.7,0.2) & (0.5,0.5) \\ (0.1,0.8) & (0.3,0.7) & (0.2,0.8) & (0.4,0.4) & (0.3,0.7) & (0.1,0.5) & (0.6,0.2) \\ (0.2,0.7) & (0.3,0.4) & (0.5,0.5) & (0.5,0.5) & (0.2,0.7) & (0.4,0.5) & (0.3,0.5) \\ (0.3,0.4) & (0.1,0.8) & (0.3,0.8) & (0.7,0.1) & (0.4,0.3) & (0.6,0.7) & (0.3,0.6) \\ (0.3,0.7) & (0.4,0.5) & (0.2,0.6) & (0.1,0.6) & (0.3,0.4) & (0.2,0.2) & (0.2,0.6) \end{bmatrix} \end{array}$$

$$A^c = \begin{array}{c} \\ u_1 \\ u_2 \\ u_3 \\ u_4 \\ u_5 \\ u_6 \\ u_7 \end{array} \begin{array}{c} \begin{array}{ccccccc} m_1 & m_2 & m_3 & m_4 & m_5 & m_6 & m_7 \end{array} \\ \begin{bmatrix} (0.4,0.5) & (0.6,0.1) & (0.5,0.6) & (0.7,0.4) & (0.8,0.1) & (0.3,0.3) & (0.5,0.6) \\ (0.6,0.1) & (0.3,0.3) & (0.4,0.6) & (0.4,0.5) & (0.2,0.1) & (0.5,0.7) & (0.7,0.4) \\ (0.2,0.2) & (0.6,0.2) & (0.5,0.1) & (0.2,0.6) & (0.3,0.3) & (0.2,0.7) & (0.5,0.5) \\ (0.8,0.1) & (0.7,0.3) & (0.8,0.2) & (0.4,0.4) & (0.7,0.3) & (0.5,0.1) & (0.2,0.6) \\ (0.7,0.2) & (0.4,0.3) & (0.5,0.5) & (0.5,0.5) & (0.7,0.2) & (0.5,0.4) & (0.5,0.3) \\ (0.4,0.3) & (0.8,0.1) & (0.8,0.3) & (0.1,0.7) & (0.3,0.4) & (0.7,0.6) & (0.6,0.3) \\ (0.7,0.3) & (0.5,0.4) & (0.6,0.2) & (0.6,0.1) & (0.4,0.3) & (0.2,0.2) & (0.6,0.2) \end{bmatrix} \end{array}$$

$$S(A,A^c) = \begin{array}{c} \\ u_1 \\ u_2 \\ u_3 \\ u_4 \\ u_5 \\ u_6 \\ u_7 \end{array} \begin{array}{c} \begin{array}{ccccccc} m_1 & m_2 & m_3 & m_4 & m_5 & m_6 & m_7 \end{array} \\ \begin{bmatrix} 0.2 & 1 & 0.2 & 0.6 & 1.4 & 0 & 0.2 \\ 1 & 0 & 0.4 & 0.2 & 0.2 & 0.4 & 0.6 \\ 0 & 0.8 & 0.8 & 0.8 & 0 & 1 & 0 \\ 1.4 & 0.8 & 1.2 & 0 & 0.8 & 0.8 & 0.8 \\ 1 & 0.2 & 0 & 0 & 1 & 0.2 & 0.4 \\ 0.2 & 1.4 & 1 & 1.2 & 0.2 & 0.2 & 0.6 \\ 0.8 & 0.2 & 0.2 & 1 & 0.2 & 0 & 0.8 \end{bmatrix} \end{array}$$

$$\text{Total Score } S = \begin{array}{c} \\ u_1 \\ u_2 \\ u_3 \\ u_4 \\ u_5 \\ u_6 \\ u_7 \end{array} \begin{bmatrix} 3.6 \\ 2.8 \\ 3.4 \\ 5.8 \\ 2.8 \\ 4.8 \\ 3.8 \end{bmatrix}$$

It is seen that the group u_4 has the maximum score and it is calculated that the men representative in the age group of representative in the age of 38 to 42 years are worst affected.

5. Conclusion

The men medical representatives affected by stress begin at the age 38. The maximum age group of stress for men medical representatives 38 to 42 as they have don't sleep,Muscle Pain, Frequent head ache,Restlessness,Hair Loss,Stomach Pain,Wake up tired due to heavy work. But some of the symptoms start at the earlier stage in the age from 26 to 30 when they started their courier. It's happened only due to family situation, society pressure, target of the company and manager pressure.This study found that the men medical representatives were under pressure and they were facing work induced stress.At this present time many major changes are being imposed on the men medical representative's job and it is unclear if the profession is able to adequately deal with these changes.Any development in the nature of job profile and working hours need to be considered in the context of the well being of the men medical representatives who implement,and were affected by the changes.Further research is necessary to delvelope deeper in to the various reasons for work induced stress and the solutions which could be applied to meliorating work induced stress in men medical representatives .

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