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PROBLEM OF STUDYING INDUCED DISPLACEMENT IN TAMIL NADU USING CETD MATRIX

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ABSTRACT

Every Nation strives hard to develop its economic status. Mainly the infrastructural developmental projects that are carried out by the state and central government results in the displacement of people from their dwelling places. This has affected many people psychologically in an adverse way. In this article we analyse the tension and consequences behind the displacement issues. Our objective of this paper is to find out the peak age group of people affected due to their displacement. Now we use CETD matrix to study the problem of development induced displacement in Tamil Nadu.

KEYWORDS :CETD Matrix, ATD Matrix, RTD Matrix, displacement, dwelling places.

1. INTRODUCTION

This paper has four sections. In the first section we recall the methods of applications of CETD Matrix. In section two we describe the psychological effects faced by the dwellers of Kannagi Nagar & Semmencherry. In section three we apply the psychological effects faced by the dwellers by using CETD Matrix to find out the peak age group of people affected due to the problem of development induced displacement. In the final section we derive conclusions and give suggestion based on our study.

1.1. The method of application of CETD matrix:

We give a very simple but a very effective technique on the collected data. From that data we recognized that many people suffer due to displacement problem. Based on the words, we took seven psychological effects that the people undergo and the entries are recorded in a form of matrix by taking ages along the columns and the psychological effects along the rows.

1.1.1. Averages Time Dependent (ATD) matrix.

Raw data transform it into a raw time dependent data matrix by taking along the rows the age group and along the columns symptoms using the row data matrix we make it into the Average Time Dependent Data (ATD) matrix (aji) by dividing each entry of the raw matrix by the number of years i.e., the time period. This matrix represents a data, which is totally uniform. At the third stage we find the average and Standard Deviation (S.D) of every column in the ATD matrix.

Using the average μj of each jth column and s jthe S.D of each jth column we chose a parameter a from the interval [0, 1] and the Refined time Dependent Matrix (RTD matrix),

Using the formula

aij $\leq$ (jμα *j) then eij= -1 else if aij $\in$ (μj– α *σj, μj+ α*σj) then eij= 0 else

Ifaij $\leq$ (jμα *j) then eij= 1

We redefined the ATD matrix into the refined time dependent fuzzy matrix for here the entries are -1, 0 or 1. Now the row sum of this matrix gives the maximum age groups.

1.1.2 .Combined Effective Time Dependent Data (AETD) matrix

We also combine the above RTD matrices by varying the a $\in$ [1, 0], so that we get the Combined Effective Time Dependent Data (CETD) matrix. The row sum obtained for CETD matrix and conclusion are derived based on the row sums. All these are represented by graphs play a vital role in exhibiting the data by the simplest means, which can be even understood by a layman.

2. DESCRIPTION OF THE PROBLEM:

Mental and physical well being of an individual depends on various factors. It also includes the place He / She lives. In order to beautify the city, government undertakes various projects like expanding Highways, Roads, Building Industries and Shopping Malls etc. As a result of this, many people are forced to vacate from the places where they have been residing for years. Even though government provides houses for them to reside, in some other area they undergo lot of troubles in many aspects. There are many age groups of people who were undergoing various risks. If the places allotted by the government are too far, it is tough for the school students, college students and for working people to continue their schooling and job. Due to the change of place, there is a chance of being affected by health problem. Feeling of nativity would have been nurtured among each individual from their childhood. Suddenly when the environment changes, it may make them unstable and sad. From the survey it is revealed that a kind of anxiety develops among each individual and that kills their internal peace. Many has revealed the fact that they are not comfortable with the house which are provided by the government. They suffer a lot without any proper facilities. Many people go depressed without knowing what to be done and thinking about their future. It is estimated that there is high morbidity and mortality rate among these people. Since they are united with their neighbours and relatives in the old place, it makes them feel lonely when forced to shift to new place. They are also undergoing problems like lack of sleep, unemployment, stress, Impulsive actions etc. in this paper we have analysed the psychological effects faced by the dwellers and found out the maximum age group of people affected due the problem of development induced displacement.

2.1. Estimation of psychological effects faced by dwellers of Kannagi Nagar &Semmenchery in Chennai using 6x7 matrices.

Now applying the psychological effect faced by the dwellers to the CETD model and derives our conclusion by taking the year of study along the row and attributes along the columns.100 families from Kannagi Nagar and Semmenchery were interviewed and the following attributes and datas were collected from them

P1- Post Traumatic stress and anxiety.
P2- Depression.
P3- Economic Hardship.
P4- Erratic Thinking and Impulsive Action.
P5- Loss of regular livelihood and social integration.
P6-Diminished Sense of Self-worth.
P7- Experiencing increased Morbidity and mortality rate.

3. INITIAL RAW DATA MATRIX

Age	A_1	A_2	A_3	A_4	A_5	A_6	A_7
15-20	4	5	3	4	6	2	3
21-26	7	6	8	5	9	5	4
27-34	8	8	7	6	9	7	5
35-41	9	9	8	9	8	6	6
42-49	9	8	8	8	9	7	7
50-60	8	9	8	7	8	7	9

3.1.The ATD matrix

Age	A_1	A_2	A_3	A_4	A_5	A_6	A_7
15-20	0.667	0.833	0.5	0.667	1	0.333	0.5
21-26	1	0.857	1.143	0.714	1.286	0.714	0.571
27-34	1	1	0.875	0.75	1.125	0.875	0.875
35-41	1.286	1.286	1.143	1.286	1.143	0.857	0.857
42-49	1.125	1	1	1	1.125	0.875	0.875
50-60	0.727	0.818	0.727	0.636	0.727	0.636	0.818

3.2.The average and the S.D of ATD Matrix

Attributes	A_1	A_2	A_3	A_4	A_5	A_6	A_7
Average	0.9675	0.9657	0.898	0.8422	1.0677	0.715	0.7077
S.D	0.1050	0.1772	0.2519	0.5598	0.1903	0.2117	0.1619

3.3RTD Matrix for $\propto = 0.25$ Row sum matrix

$$\begin{bmatrix} -1 & -1 & -1 & -1 & 0 & -1 & -1 \\ 1 & -1 & 1 & 0 & 1 & 0 & -1 \\ 1 & 0 & 0 & 0 & 1 & 1 & -1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 0 & 1 & 1 & 1 & 1 & 1 \\ -1 & -1 & -1 & -1 & -1 & -1 & 1 \end{bmatrix} \begin{bmatrix} -6 \\ 1 \\ 2 \\ 7 \\ 6 \\ -5 \end{bmatrix}$$

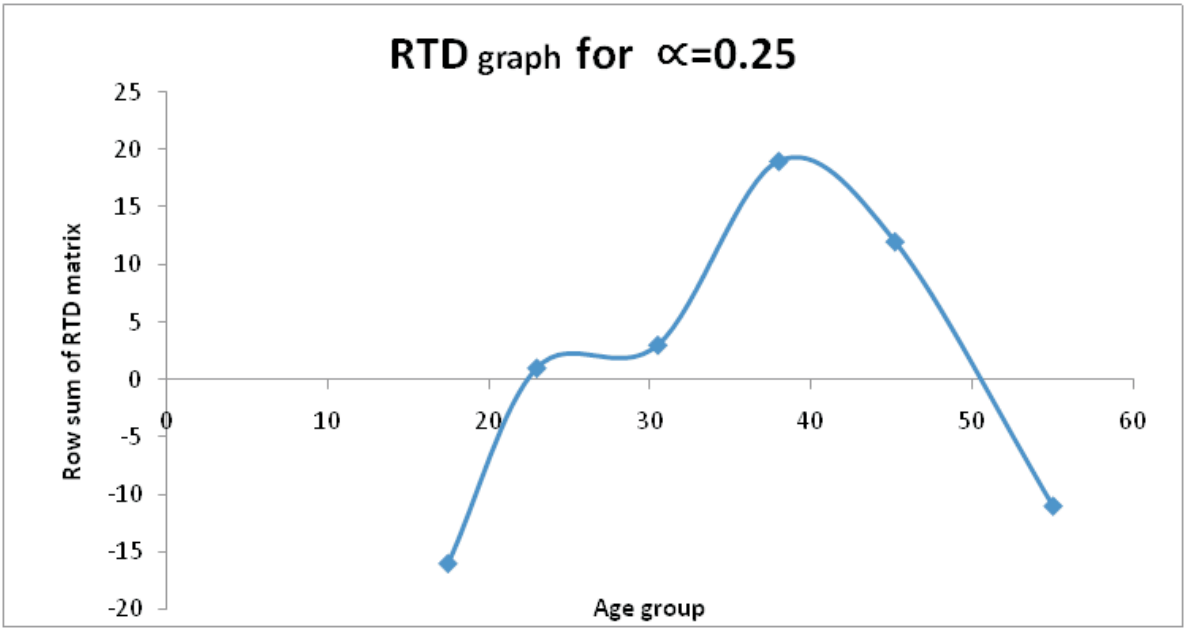


Figure1: The graph depicting the maximum age group of dwellers for $\propto = 0.25$

3.4.RTD Matrix for $\propto = 0.45$ Row sum matrix

$$\begin{bmatrix} -1 & -1 & -1 & 0 & 0 & -1 & -1 \\ 0 & -1 & 1 & 0 & 1 & 0 & -1 \\ 0 & 0 & 0 & 0 & 0 & 1 & -1 \\ 1 & 1 & 1 & 1 & 0 & 1 & 1 \\ 1 & 0 & 0 & 0 & 0 & 1 & 1 \\ -1 & -1 & -1 & 0 & -1 & 0 & 1 \end{bmatrix} \begin{bmatrix} -5 \\ 0 \\ 0 \\ 6 \\ 3 \\ -3 \end{bmatrix}$$

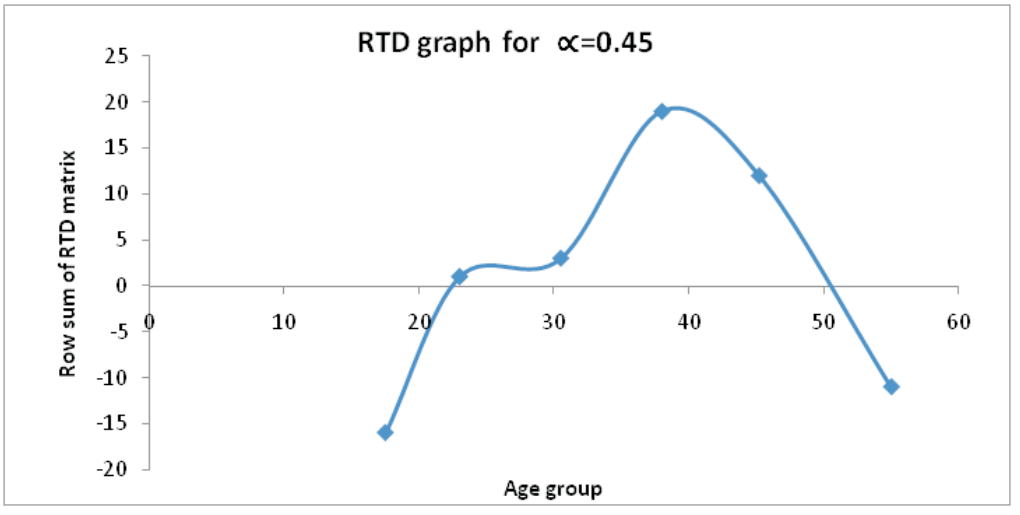


Fig2: The graph depicting the maximum age group of dwellers for $\propto = 0.45$

3.5.RTD Matrix for $\propto = 0.65$ Row sum matrix

$$\begin{bmatrix} -1 & -1 & -1 & -1 & 0 & -1 & -1 \\ 1 & -1 & 1 & 0 & 1 & 0 & -1 \\ 1 & 0 & 0 & 0 & 0 & 1 & 0 \\ 1 & 1 & 1 & 1 & 0 & 1 & 1 \\ 1 & 0 & 0 & 0 & 0 & 1 & 1 \\ -1 & -1 & -1 & -1 & -1 & -1 & 1 \end{bmatrix} \begin{bmatrix} -5 \\ 0 \\ 1 \\ 6 \\ 3 \\ -3 \end{bmatrix}$$

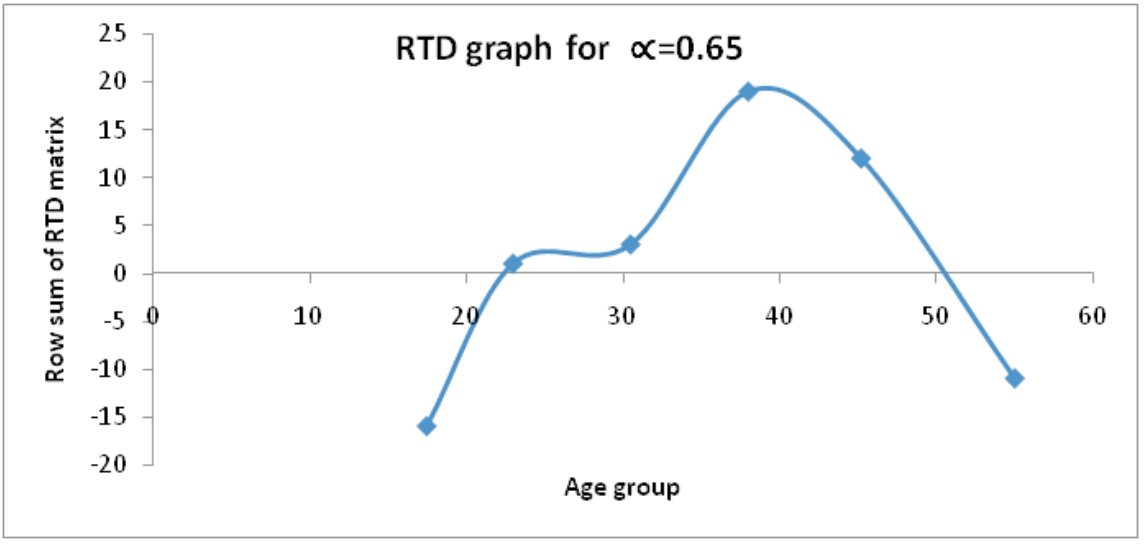
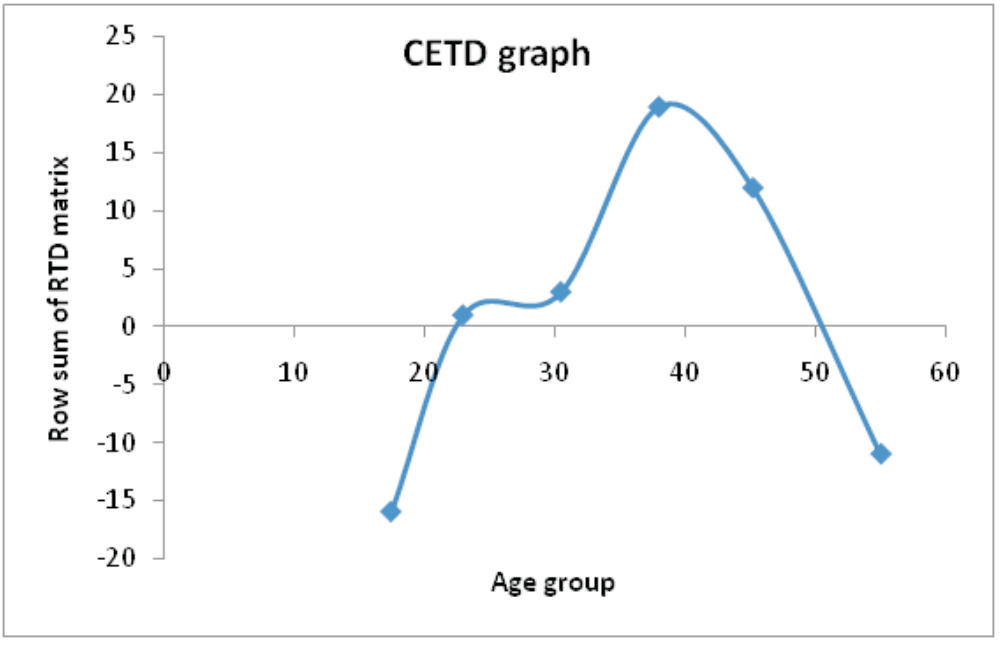


Figure 3 : The graph depicting the maximum age group of dwellers for $\propto = 0.65$

3.6.The CETD Matrix Row sum matrix

$$\begin{bmatrix} -3 & -3 & -3 & -1 & 0 & -3 & -3 \\ 1 & -3 & 3 & 0 & 3 & 0 & -3 \\ 1 & 0 & 0 & 0 & 0 & 3 & -2 \\ 3 & 3 & 3 & 3 & 1 & 3 & 3 \\ 3 & 0 & 1 & 1 & 1 & 3 & 3 \\ -3 & -3 & -3 & -1 & -3 & -1 & 3 \end{bmatrix} \begin{bmatrix} -16 \\ 1 \\ 3 \\ 19 \\ 12 \\ -11 \end{bmatrix}$$



4. OBSERVATION AND CONCLUSION:

From the CETD Matrix analysis we see that, the dweller face many psychological effect due to the development induced displacement problem. We have took the 7 major problem for our study this includes past traumatic stress and anxiety, Depression, Economic Hardship, Erratic Thinking and Impulsive Action, Loss of regular livelihood and social integration, Diminished Sense of Self-worth, Experiencing increased Morbidity and mortality rate. In this study we have able to analysis clearly that the dwellers of age group 35-41 are affected in a most worst way. Since they have lived in that place for years, a sudden unexpected action taken by the government spoils their dreams, peace and affects them psychologically. Even though government provides own house, it does not satisfy them completely. They face many troubles like no proper occupation, Disintegration of social relationship, education problem for children, feeling of nativity, Fear of future etc.

This problem can be eradicated to some extent if government provides them a good place for residing. They must have all facilities like education for their children, occupation, medical facilities, and places like parks, shopping spots etc. This may prepare them to have a better living.

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