Mathematical Modelling: A Study of Corruption in Various fields of the Society

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Abstract: *In this paper we have to study on the problem of 'Corruption' in different ways by using mathematical modelling. The problem of corruption is everywhere, so we will try to find the solution for the problem of 'removing corruption' in the society. Therefore, how to measure the corruption in the society of any field or any country in the world? So, we have found the formula that is Mathematical corruption model for measuring the corruption in the society of any field or any country of the world. When we measure the corruption in the society then there will be no difficult to remove the corruption from the society of any country in the world. So we have to take some illustrations for measuring the corruption in various fields of the country India.*
Keywords: *mathematical thinking, corruption mentality, modelling, applied.*

I.   Introduction:

We have to study some formulae on "Corruption" in the difference equation form is known as Mathematical Corruption Model. The objective of mathematical analysis is to provide some general understanding of discrete models for corruption such as this, so that we can determine how the system behaves without having to iterate it numerically. Numerical iteration tells us only what one particular trajectory of the system will be through time. We had potentially had to do much iteration to get a general picture of the behavior of the system, and mathematical analysis saves us from having to do this. These mathematical discrete models for corruptions formulae are as of the following:

- Mathematical Discrete Model of Corruption with the Difference Equation Formula:
$$C = C_0(К + 1)^t$$
- Mathematical Decay of Discrete Model of Corruption (or MCC Model) with the Difference Equation Formula:
$$C = C_0(К + 1)^{-t}$$
- Mathematical Corruption-Development Model with the Difference Equation Formula:
$$D(C) = D(0)[1 + К]^C$$
- Mathematical Development Model with the Difference Equation Formula:
$$D = D_0[1 + К]^t$$
- Mathematical E-virus Constant Model with Related Time in the Difference Equation Formula:
$$К = [\frac{C(t)}{C(0)}]^{\frac{1}{t}} - 1, \, -1 < К < 1$$
- Mathematical E-virus Constant Model with Related Corruption in the Difference Equation Formula:
$$К = [\frac{D(C)}{D(0)}]^{\frac{1}{C}} - 1, \, -1 < К < 1$$

Note that if the value of К is more than 1 then we choose or take the value of К is approximately to 1 but not equal to 1.

All the above Mathematical discrete corruption model formulae are used for measuring as well as controlling the corruption in the society of any country of the world.

II.   Methodology:

We have to use the seven steps of mathematical modelling process for solving the problem of corruption in the society of any country of the world. The mathematical modelling process is the translation from rest of the world to the Mathematics world. Also we know that rest of world means outside mathematics that is nature, society, everyday life and other scientific disciplines. So first we understand the real problem 'corruption' then make a real model after that by using mathematical operations we get mathematical model then using some assumptions we get mathematical result then interpreting this mathematical result if it is true we get the final result otherwise revise the model. This process is known as 'Mathematical modeling'. It is as follows:
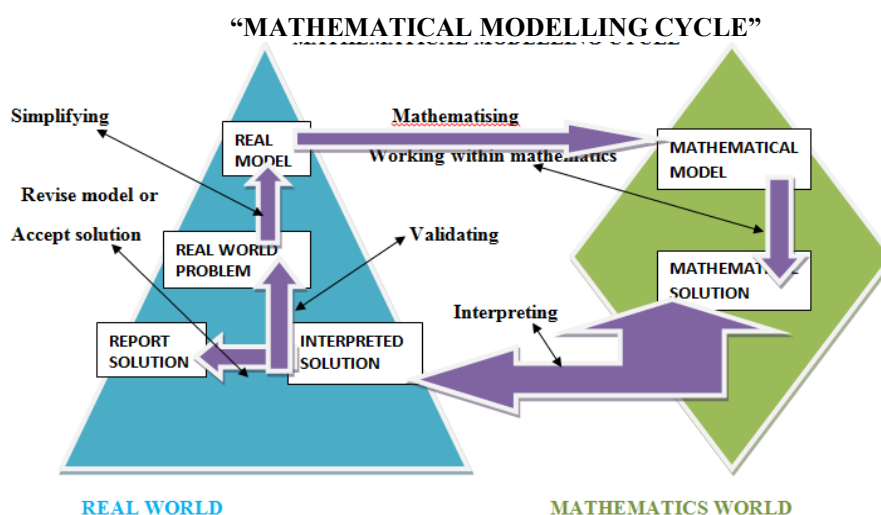
"MATHEMATICAL MODELLING CYCLE"

Fig.1: The "Answer Plan" for Mathematical modeling process.
Mathematical modelling means "Translation from real world problems into Mathematics world."

III.   Some Illustrations for measuring the Corruption in the Society:
Corruption may be defined as an illegal selling of a public entity that is government, public corporation, public charity etc. property or services for gain or bribe to the seller not to the public entity. In the society Corruption problems are everywhere in various cities and various villages in any country of the world. We have observed that the 'Common Man' in the society faced Corruption problem in obtaining 11 (eleven) different public services such as:
* Income Tax bureaucracy   * Municipal Services * Judiciary * Rural Financial Institution (RFI) * Land Administration * Police (crime/traffic)   * Education: Public Schools/colleges and other Institutions * Water Suppliers * Electricity Suppliers * Government Hospitals   * Ration/Aadhar Card Suppliers. Here we have to explain one illustration for public services. There is as of the following:

3.1: Income Tax bureaucracy:
We have known that in India the most of the people have paid Income tax from 15 August, 1947 but also among these maximum numbers of people have not paid (full or less) or miss the Income tax. So I will try to find how many people's have paid Income tax or not or less from 15 August 1947.
We assume that first ten years period that is 15 August, 1947 to 15 August, 1957; the 0.5% people of total population 35 crore had paid Income tax. That is C(0)= 0.175 crore when t=0; after t=10 years Mathematical Model Period, C(t)= 0.30625 crore that is 7/4 of C(0). Therefore we find the value of Mathematical E- virus Constant К.
We know that the Mathematical E-virus Constant Model with related time formula in the difference equation form,

$$\therefore \qquad К = [\frac{C(t)}{C(0)}]^{\frac{1}{t}} - 1$$

$$\therefore \qquad 1+К = [\frac{0.30625}{0.175}]^{\frac{1}{10}}$$

Putting this value in the following Mathematical corruption model with difference equation form, we get

$$\therefore \qquad C = C_0 [1 + К]^t$$

$$\therefore \qquad C = 0.175 \times [\frac{0.30625}{0.175}]^{\frac{t}{10}}$$

$$\therefore \qquad \mathbf{C = 0.175 \times [1.75]^{\frac{t}{10}}} \qquad \text{------------------------- (I)}$$

This is known as **Mathematical Model base Corruption with related time formula.** The following table shows that the total number of Income tax paid holder or not (full or less) paid holder with related Mathematical model period t=10 years from 15 August, 1947 to 15 August, 2001 and t=1 year from 15 August 2001 to 15 August, 2014. It is as,
When t= 10 years from base; that is 15 August, 1957, what is C=?

From (I), $\therefore \qquad C = 0.175 \times [1.75]^{\frac{10}{10}}$

$\therefore \qquad C = 0.175 \times [1.75]^{\frac{1}{1}}$

∴   C= 0.175× 1.75
∴   **C= 0.30625 crore**

When t= 20 years from base; that is 15 August, 1967, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{20}{10}}$

∴   C= 0.175× $[1.75]^{\frac{2}{1}}$

∴   C= 0.175× 3.0625

∴   **C=0.5359375 crore**

When t= 30 years from base; that is 15 August, 1977, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{30}{10}}$

∴   C= 0.175× $[1.75]^{\frac{3}{1}}$

∴   C= 0.175× 5.359375

∴   **C=0.937890625 crore**

When t= 40 years from base; that is 15 August, 1987, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{40}{10}}$

∴   C= 0.175× $[1.75]^{\frac{4}{1}}$

∴   C= 0.175× 9.37890625

∴   **C=1.64130859375 crore**

When t= 50 years from base; that is 15 August, 1997, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{50}{10}}$

∴   C= 0.175× $[1.75]^{\frac{5}{1}}$

∴   C= 0.175× 16.4130859375

∴   **C=2.872290 crore**

When t= 54 years from base; that is 15 August, 2001, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{54}{10}}$

∴   C= 0.175× $[1.75]^{\frac{5.4}{1}}$

∴   C= 0.175× 20.53078064

∴   **C=3.5928866 crore**

When t= 55 years from base; that is 15 August, 2002, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{55}{10}}$

∴   C= 0.175× $[1.75]^{\frac{5.5}{1}}$

∴   C= 0.175× 21.7124718

∴   **C=3.799682568 crore**

When t= 56 years from base; that is 15 August, 2003, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{56}{10}}$

∴   C= 0.175× $[1.75]^{\frac{5.6}{1}}$

∴   C= 0.175× 22.96217765

∴   **C=4.018381089 crore**

When t= 57 years from base; that is 15 August, 2004, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{57}{10}}$

∴   C= 0.175× $[1.75]^{\frac{5.7}{1}}$

∴   C= 0.175× 24.283812867

∴   **C=4.24966725 crore**

When t= 58 years from base; that is 15 August, 2005, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{58}{10}}$

∴   C= 0.175× $[1.75]^{\frac{5.8}{1}}$

∴   C= 0.175× 25.6815175069

∴   **C=4.49426556 crore**

When t= 59 years from base; that is 15 August, 2006, what is C=?

From (I), ∴   C= 0.175× $[1.75]^{\frac{59}{10}}$

∴   C= 0.175× $[1.75]^{\frac{5.9}{1}}$

∴   C= 0.175× 27.1596699

∴ **C=4.7529422329998 crore**

When t= 60 years from base; that is 15 August, 2007, what is C=?

From (I), ∴ $C= 0.175\times [1.75]^{\frac{60}{10}}$

∴ $C= 0.175\times [1.75]^{\frac{6}{1}}$

∴ $C= 0.175\times 28.722900390$

∴ **C= 5.026507568 crore**

When t=61 years from base; that is 15 August, 2008, what is C=?

From (I), ∴ $C= 0.175\times [1.75]^{\frac{61}{10}}$

∴ $C= 0.175\times [1.75]^{\frac{6.1}{1}}$

∴ $C= 0.175\times 30.3761058$

∴ **C= 5.315818517crore**

When t=62 years from base; that is 15 August, 2009, what is C=?

From (I), ∴ $C= 0.175\times [1.75]^{\frac{62}{10}}$

∴ $C= 0.175\times [1.75]^{\frac{6.2}{1}}$

∴ $C= 0.175\times 32.1244648657$

∴ **C=5.62178135crore**

When t=63 years from base; that is 15 August, 2010, what is C=?

From (I), ∴ $C= 0.175\times [1.75]^{\frac{63}{10}}$

∴ $C= 0.175\times [1.75]^{\frac{6.3}{1}}$

∴ $C= 0.175\times 33.97345430$

∴ **C=5.9453545037crore**

When t=64 years from base; that is 15 August, 2011, what is C=?

From (I), ∴ $C= 0.175\times [1.75]^{\frac{64}{10}}$

∴ $C= 0.175\times [1.75]^{\frac{6.4}{1}}$

∴ $C= 0.175\times 35.92886612$

∴ **C=6.2875515721crore**

When t=65 years from base; that is 15 August, 2012, what is C=?

From (I), ∴ $C= 0.175\times [1.75]^{\frac{65}{10}}$

∴ $C= 0.175\times [1.75]^{\frac{6.5}{1}}$

∴ $C= 0.175\times 37.9968256830$

∴ **C=6.64944449453crore**

When t=66 years from base; that is 15 August, 2013, what is C=?

From (I), ∴ $C= 0.175\times [1.75]^{\frac{66}{10}}$

∴ $C= 0.175\times [1.75]^{\frac{6.6}{1}}$

∴ $C= 0.175\times 40.183810891$

∴ **C=7.0321669060crore**

When t=67 years from base; that is 15 August, 2014, what is C=?

From (I), ∴ $C= 0.175\times [1.75]^{\frac{67}{10}}$

∴ $C= 0.175\times [1.75]^{\frac{6.7}{1}}$

∴ $C= 0.175\times 42.49667251$

∴ **C=7.436917690crore**

From the above we have observed and try to find that the total Income tax holder for a particular period in the country India.

### 3.1.1 Mathematical Result:

Table: I

Mathematical Model Period 't' year	Total Income tax Holder 'C' crore	Income tax not Paid Holder 'C' crore	Income tax Paid Holder 'C' crore
0	0.175	0	0.175
10	0.30625	0	0.30625
20	0.5359375	0.0546875	0.48125
30	0.937890625	0.281640625	0.65625

40	1.641308594	0.810058594	0.83125
50	2.872290	1.00625	1.86604
54	3.5928866	1.18125	2.4116366
55	3.799682568	1.35625	2.443432568
56	4.018381089	1.53125	2.487131089
57	4.24966725	1.70625	2.54341725
58	4.49426556	1.88125	2.61301556
59	4.752942233	2.05625	2.696692233
60	5.026507568	2.23125	2.795257568
61	5.315818517	2.40625	2.909568517
62	5.62178135	2.58125	3.04053135
63	5.945354504	2.75625	3.189104504
64	6.2875515721	2.93125	3.3563015721
65	6.6494444945	3.10625	3.5431944945
66	7.0321669060	3.28125	3.750916906
67	7.436917690	3.45625	3.98066769

3.1.2 Mathematical Graph:
The graph of the mathematical result is shown in the following:

Graph: I
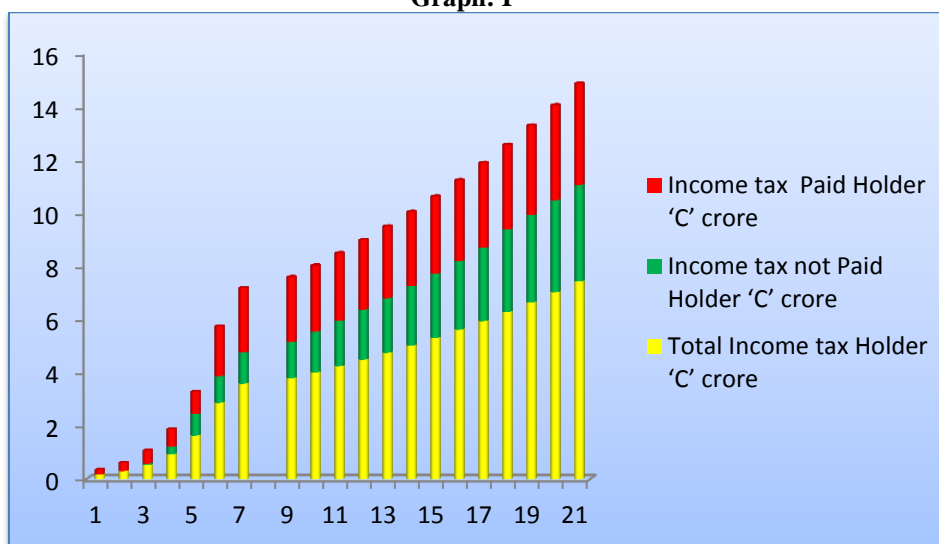
From the graph we have seen that the total number of Income tax holder in which some Income tax holder have paid or not paid or miss Income tax holder have shown for a particular period in the country India.

3.1.3 Mathematical Development in the field of Income tax bureaucracy except Corruption:

I will try to find the amount of Income tax Holder for related period. Therefore we assume that when C=0 then D(0)=0.35 crore (that is 1% of total population) at 15 August, 1947. Therefore we know that Mathematical Corruption-Development model with difference equation form, it is as

$$\therefore \quad D(C) = D(0)[1 + Қ]^C \qquad \text{------------- (i)}$$
$$\therefore \quad 0.35 = D(0)[1 + Қ]^0$$
$$\therefore \quad D(0) = 0.35 \text{ crore}$$

Putting in equation (i), we get

$$\therefore \quad D(C) = 0.35 \times [1 + Қ]^C \qquad \text{-------------- (ii)}$$

Further after t=10 years Mathematical Model period, D(C) =0.6125, when C=0.31 that is 7/4 of D(0).
Therefore from equation (ii), we have

$$\therefore \quad 0.6125 = 0.35 \times [1 + Қ]^{0.31}$$
$$\therefore \quad 1 + Қ = [\frac{0.6125}{0.35}]^{\frac{1}{0.31}}$$

Putting this value in equation (ii), we have

$$\therefore \quad D(C) = 0.35 \times \left[\frac{0.6125}{0.35}\right]^{\frac{C}{0.31}}$$

$$\therefore \quad \mathbf{D(C) = 0.35 \times [1.75]^{\frac{C}{0.31}}} \qquad \text{---------------} \quad (iii)$$

This is known as **Mathematical Model base Development with related Corruption formula.**

Now when t=0, C=0.175 (0.5% of population) on 15 August, 1947, what is D(C) =?

Therefore from equation (iii), we have

$$\therefore \quad D(C) = 0.35 \times [1.75]^{\frac{0.175}{0.31}}$$

$$\therefore \quad D(C) = 0.35 \times [1.75]^{0.56}$$

$$\therefore \quad \mathbf{D(C) = 0.4788167688 \ crore}$$

When t=10 years, C=0.30625 crore on 15 August, 1957, then what is D(C)=?

Therefore from equation (iii), we have

$$\therefore \quad D(C) = 0.35 \times [1.75]^{\frac{0.30625}{0.31}}$$

$$\therefore \quad D(C) = 0.35 \times [1.75]^{0.99}$$

$$\therefore \quad \mathbf{D(C) = 0.609081926 \ crore}$$

When t=20 years, C= 0.5359375 crore on 15 August, 1967, then what is D(C)=?

Therefore from equation (iii), we have

$$\therefore \quad D(C) = 0.35 \times [1.75]^{\frac{0.5359375}{0.31}}$$

$$\therefore \quad D(C) = 0.35 \times [1.75]^{1.7288}$$

$$\therefore \quad \mathbf{D(C) = 0.9209418797 \ crore}$$

When t=30 years, C= 0.937890625 crore on 15 August, 1977, then what is D(C)=?

Therefore from equation (iii), we have

$$\therefore \quad D(C) = 0.35 \times [1.75]^{\frac{0.937890625}{0.31}}$$

$$\therefore \quad D(C) = 0.35 \times [1.75]^{3.02545}$$

$$\therefore \quad D(C) = 0.35 \times 5.436250547$$

$$\therefore \quad \mathbf{D(C) = 1.902687691 \ crore}$$

When t=40 years, C=1.641308594 crore on 15 August, 1987, then what is D(C)=?

Therefore from equation (iii), we have

$$\therefore \quad D(C) = 0.35 \times [1.75]^{\frac{1.641308594}{0.31}}$$

$$\therefore \quad D(C) = 0.35 \times [1.75]^{5.29454}$$

$$\therefore \quad D(C) = 0.35 \times 19.354175 \ crore$$

$$\therefore \quad \mathbf{D(C) = 6.7739613541 \ crore}$$

When t=50 years, C=2.872290 crore on 15 August, 1997, then what is D(C)=?

Therefore from equation (iii), we have

$$\therefore \quad D(C) = 0.35 \times [1.75]^{\frac{2.872290}{0.31}}$$

$$\therefore \quad D(C) = 0.35 \times [1.75]^{9.2655}$$

$$\therefore \quad D(C) = 0.35 \times 178.5948947 \ crore$$

$$\therefore \quad \mathbf{D(C) = 62.5082132 \ crore}$$

When t=54 years, C= 3.5928866 crore on 15 August, 2001, then what is D(C)=?

Therefore from equation (iii), we have

$$\therefore \quad D(C) = 0.35 \times [1.75]^{\frac{3.5928866}{0.31}}$$

$$\therefore \quad D(C) = 0.35 \times [1.75]^{11.5899}$$

$$\therefore \quad D(C) = 0.35 \times 655.8230558 \ crore$$

$$\therefore \quad \mathbf{D(C) = 229.5380695 \ crore}$$

When t=55 years, C=3.799682568 crore on 15 August, 2002, then what is D(C)=?

Therefore from equation (iii), we have

$$\therefore \quad D(C) = 0.35 \times [1.75]^{\frac{3.799682568}{0.31}}$$

$$\therefore \quad D(C) = 0.35 \times [1.75]^{12.25704}$$

$$\therefore \quad D(C) = 0.35 \times 952.6362081 \ crore$$

$$\therefore \quad \mathbf{D(C) = 333.4226728 \ crore}$$

When t=56 years, C= 4.018381089 crore on 15 August, 2003, then what is D(C)=?

Therefore from equation (iii), we have

$$\therefore \quad D(C) = 0.35 \times [1.75]^{\frac{4.018381089}{0.31}}$$

$$\therefore \quad D(C) = 0.35 \times [1.75]^{12.96252}$$

$$\therefore \quad D(C) = 0.35 \times 1413.792152996 \ crore$$

$$\therefore \quad \mathbf{D(C) = 494.82725355 \ crore}$$

When t=57 years, C=4.24966725crore on 15 August, 2004, then what is D(C)=?
Therefore from equation (iii), we have

∴ $D(C) = 0.35 \times [1.75]^{13.70860}$
∴ $D(C) = 0.35 \times 2146.403630$ crore
∴   **$D(C) = 751.241270633$ crore**

When t=58 years, C= 4.49426556 crore on 15 August, 2005, then what is D(C)=?
Therefore from equation (iii), we have

∴ $D(C) = 0.35 \times [1.75]^{\frac{4.49426556}{0.31}}$
∴ $D(C) = 0.35 \times [1.75]^{14.4976}$
∴ $D(C) = 0.35 \times 3337.862287$ crore
∴   **$D(C) = 1168.251800$ crore**

When t=59 years, C= 4.752942233 crore on 15 August, 2006, then what is D(C)=?
Therefore from equation (iii), we have

∴ $D(C) = 0.35 \times [1.75]^{\frac{4.752942233}{0.31}}$
∴ $D(C) = 0.35 \times [1.75]^{15.3321}$
∴ $D(C) = 0.35 \times 5324.55928$ crore
∴   **$D(C) = 1863.5957468$ crore**

When t=60 years, C=5.026507568 crore on 15 August, 2007, then what is D(C)=?
Therefore from equation (iii), we have

∴ $D(C) = 0.35 \times [1.75]^{\frac{5.026507568}{0.31}}$
∴ $D(C) = 0.35 \times [1.75]^{16.2145}$
∴ $D(C) = 0.35 \times 8724.497859$ crore
∴   **$D(C) = 3053.5742507768$ crore**

When t=61 years, C= 5.315818517 crore on 15 August, 2008, then what is D(C)=?
Therefore from equation (iii), we have

∴ $D(C) = 0.35 \times [1.75]^{\frac{5.315818517}{0.31}}$
∴ $D(C) = 0.35 \times [1.75]^{17.14780}$
∴ $D(C) = 0.35 \times 14708.48193$ crore
∴   **$D(C) = 5147.9686753$ crore**

When t=62 years, C= 5.62178135 crore on 15 August, 2009, then what is D(C)=?
Therefore from equation (iii), we have

∴ $D(C) = 0.35 \times [1.75]^{\frac{5.62178135}{0.31}}$
∴ $D(C) = 0.35 \times [1.75]^{18.13478}$
∴ $D(C) = 0.35 \times 25552.979383$ crore
∴   **$D(C) = 8943.5427840$ crore**

When t=63 years, C= 5.945354504 crore on 15 August, 2010, then what is D(C)=?
Therefore from equation (iii), we have

∴ $D(C) = 0.35 \times [1.75]^{\frac{5.945354504}{0.31}}$
∴ $D(C) = 0.35 \times [1.75]^{19.17857}$
∴ $D(C) = 0.35 \times 45827.084595$ crore
∴   **$D(C) = 16039.47960837$ crore**

When t=64 years, C= 6.2875515721 crore on 15 August, 2011, then what is D(C)=?
Therefore from equation (iii), we have

∴ $D(C) = 0.35 \times [1.75]^{\frac{6.2875515721}{0.31}}$
∴ $D(C) = 0.35 \times [1.75]^{20.28242}$
∴ $D(C) = 0.35 \times 84996.25278$ crore
∴   **$D(C) = 29748.6884723$ crore**

When t=65 years, C= 6.6494444945crore on 15 August, 2012, then what is D(C)=?
Therefore from equation (iii), we have

∴ $D(C) = 0.35 \times [1.75]^{\frac{6.6494444945}{0.31}}$
∴ $D(C) = 0.35 \times [1.75]^{21.4498}$
∴ $D(C) = 0.35 \times 163349.39741$ crore
∴   **$D(C) = 57172.2890926$ crore**

When t=66 years, C= 7.0321669060 crore on 15 August, 2013, then what is D(C)=?
Therefore from equation (iii), we have

∴   D(C) = 0.35 × $[1.75]^{\frac{7.0321669060}{0.31}}$

∴   D(C) = 0.35 × $[1.75]^{22.68441}$

∴   D(C) = 0.35 × 325967.830489676 crore

∴   **D(C) = 114088.740671386 crore**

When t=67 years, C=7.436917690 crore on 15 August, 2014, then what is D(C)=?

Therefore from equation (iii), we have

∴   D(C) = 0.35 × $[1.75]^{\frac{7.436917690}{0.31}}$

∴   D(C) = 0.35 × $[1.75]^{23.9901}$

∴   D(C) = 0.35 × 676872.8457893 crore

∴   **D(C) = 236905.49602626 crore**

3.1.3.1 Mathematical Result:

From the above we have found the mathematical result of earlier example. There are as of the following table:

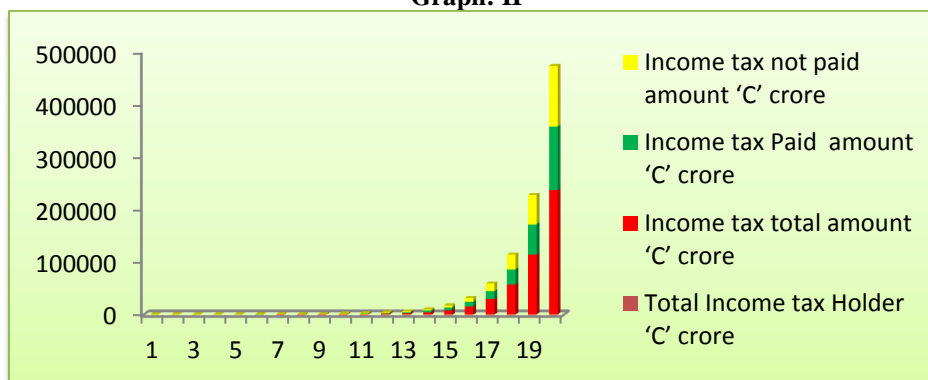**Table: II**

Mathematical Model Period 't' year	Total Income tax Holder 'C' crore	Income tax total amount 'C' crore	Income tax Paid amount 'C' crore	Income tax not paid amount 'C' crore
0	0.175	0.4788167688	0.4788167688	0
10	0.30625	0.609081926	0.609081926	0
20	0.5359375	0.9209418797	0.8269682185	0.0939736612
30	0.937890625	1.902687691	1.3313266642	0.5713610268
40	1.641308594	6.7739613541	3.430710956	3.3432503981
50	2.872290	62.5082132	40.6096968481	21.8985163519
54	3.5928866	229.5380695	154.0716907	75.4663788
55	3.799682568	333.4226728	214.4115470	119.0111258
56	4.018381089	494.82725355	306.2676781	188.55957545
57	4.24966725	751.241270633	449.61638035	301.624890283
58	4.49426556	1168.251800	679.234480	489.01732
59	4.752942233	1863.5957468	1057.3543564	806.2413904
60	5.026507568	3053.5742507768	1698.10279174	1355.4714590368
61	5.31581852	5147.9686753	2817.697319096	2330.271356204
62	5.62178135	8943.5427840	4837.100648679	4106.442135321
63	5.945354504	16039.47960837	8603.62096599	7435.85864238
64	6.2875515721	29748.6884723	15051.8923494	14696.7961229
65	6.649444495	57172.2890926	28959.9213166	28222.367776
66	7.0321669060	114088.740671386	58015.0986182	56073.642053186
67	7.436917690	236905.49602626	121230.81488758	115674.68113868

3.1.3.2 Mathematical Graph:

From the above calculated data in the table shows that how many Income tax holders in the country India and their total amount in the form of Income tax total amount, Income tax paid amount and Income tax not or less paid amount. There are shown in the following graph:

Graph: II

We have observed from Table-I, Table-II, Graph-I and Graph-II that the total Income tax holder and their amount have increased for every year from 15 August 1947. Also we have observed that among these IT-holder,

some have paid income tax and some have not (less or miss) paid income tax and both are increased for every year from 15 August 1947.

For every time we have used mathematical modelling that means we have given a real world problem "Corruption" that is "for removing corruption from the society" convert this problem in to the mathematics problem. Further by using seventh step of mathematical modelling, we have found mathematical corruption model with difference equation form. Then for every mathematical model period we can found mathematical result and when we compare this mathematical result with the real world mathematical result if it is true then we get mathematical solution of the real world problem.

IV.   Conclusion:

In this paper we have studied the topic for measuring and removing corruption from the society by using mathematical modelling. Also we have observed and it concluded that the real world problem "corruption" from the society when we convert this problem in to mathematics problem then we get some models such as 'Mathematical Corruption Model, Mathematical Corruption Control Model, Mathematical Corruption-Development Model, Mathematical Development Model and Mathematical E-virus Constant Model'. They are used for measuring as well as removing the corruption from the society of any country of the world. Also we know that India is the largest democracy in the world. So it continues to struggle on a daily basis to fight corruption in the various fields of the society such as in politics at both the national and local levels different government as well as private offices. In India, there are a rich diversity of languages, cultures and traditions, nothing is more important to reconciling all the differences than the right for vote. However, the democratically elected government seemingly does nothing to bridge the enormous gap between the rich and the poor and to make the lives of the 500 or 600 million people living below the poverty line any better. Also we know in India there are more people living in poverty than any other nation and therefore for finding a solution to these basic issues of human rights has recently taken a backseat to nuclear weapons testing and other extravagant nationalist issues on the Indian political agenda.

Furthermore, the instability and corruption of the government since India won its independence in 15 August, 1947 has discouraged the long-term investments that are needed to drive economic growth. The fact of the matter is that India is on far with the United States as one of the models of democracy in the world; yet, India is far behind the United States in its economic development. There can only be one explanation for India's unimpressive economic record and maximum peoples living in poverty the unprecedented political corruption and instability that can so easily be seen at all levels of government. Unfortunately, there are very few means for the citizens to fight the corruption in the current system. In this connection we have seen from the above two illustrations that the total number of people have income tax holder and among these people, approximately 50% people have paid income tax sincerely. There are shown of the following:

Table: III

Mathematical Model period t year	Mathematical Result in Real world Income tax Paid holder (crore)	Mathematical Result in (calculated) Mathematics world Income tax Paid holder (crore)
2005-2006	2.98	2.7459749
2006-2007	3.13	2.8524130425
2007-2008	3.36	2.9750499335
2008-2009	3.27	3.114817927
2009-2010	3.41	3.27270303805
2010-2011	3.48	3.4497480333
2011-2012	3.65	3.64705570025
2012-2013	3.87	3.865792298
2013-2014	3.99	3.98066769

The above table shows that the comparatively mathematical study between the real world problem and mathematics world. Also we check the validity from the above two results that is both the results are approximately equal. That is our Mathematical Corruption Model is valid for the above illustrations.

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