# A Study On Fuzzy Cognitive Mapping On Real Time Situation

**G.Jenitha**[∗]
**Dr. Shenbaga Ezhil**[∗∗]
[3]**Dr. A. Kumaravel**[∗∗∗]

**Keywords:**

Fuzzy sets;
Cognitive maps;
FCM.

**Abstract** (10pt)

Achievement for Happiness has urbanized the 5 Keys to Happier Living based on a review of the
latest scientific research relating to happiness. Everyone's path to happiness is different, but the research suggests these five things consistently tend to have a positive impact on people's overall happiness and well-being. The key motive of development is happiness. The ultimate aim of life is to be happy. Everyone wants to be happy. Searching for happiness is the ultimate aim of their life and start to find happiness in all their activities. Happiness varies person to person. In this paper we discussed to how we interact with the **outside** world in our daily activities based on fuzzy cognitive maps.

*Author correspondence:*

First Author,
[1]Assistant ProfessorDepartment of Mathematics, AMET University, Kanathur, ChennaiEmail:

## 1. Introduction

Happiness is a mental or emotional state of well-being characterized by positive or pleasantemotions ranging from contentment to intense joy. Philosophers and religious thinkers often define happiness in terms of living a good life, or flourishing, rather than simply as an emotion. "Happiness comes from giving, not getting. If we try hard to bring happiness to others, we cannot stop it from coming to us also. Happiness is a key motive of development of a country. Every nation wants to make their country as developed. But less nations care about the happiness of their people. The function of man is to live a certain kind of life and this activity implies a rational principle and the function of a good man is the good and noble performance of these, and if any action is well performed it is performed in accord with the appropriate excellence. If this is the case, then happiness turns out to be an activity of the soul in accordance with virtue. That is happiness as the exercise of virtue.

According to the Greek philosopher Aristotle, happiness consists in achieving through the course of the whole lifetime all the goods, health, wealth, knowledge, friends, etc., that leads to the perfection of human nature and to the enrichments of human life. *Victor*-Marie *Hugo* (26 February 1802 – 22 May 1885) was a French poet, statesman, human rights activist

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[∗] Doctorate Program, Linguistics Program Studies, Udayana University Denpasar, Bali-Indonesia (9 pt)
[∗∗] STIMIK STIKOM-Bali, Renon, Depasar, Bali-Indonesia
[∗∗∗] English Language Specialist, Oller Center, Carriage House, 2nd Floor, California, USA

## 2. Research Method

### 1.2 The Five Main Key Motive of Happiness

According to the experts opinion we have arrived at five main key motive of happiness they are

1.  Relating (Do things for others)
2.  Giving (connect with people).
3.   Exercising (Take care of your body) .
4.  Appreciating ( Notice the world around).
5.   Trying out (Keep learning new things)

### 1.3 Effects of happiness

Happiness is a tool to enjoy the life. Everyone is searching for happiness in all their activities. Satisfaction of life is seems to be more important than anything else in the world. Happiness gives us a motivation to work hard towards the goal and it helps to reduce the strain and stress. We get confidence and can able to achieve everything. Happiness gives us the satisfaction of life and peace of mind. And experts say that if you are happy then you look young.

### 2.1 Introduction

In this section we recall the notion of Fuzzy Cognitive Maps (FCMs), which was introduced by Bart Kosko in the year 1986.We also give several of its interrelated definitions. FCMs have a major role to play mainly when the data concerned is an unsupervised one. Further this method is most simple and an effective one as it can analyze the data by directed graphs and connection matrices.

**2.2 Definition:** An FCM is a directed graph with concepts like policies, events, etc. as nodes. And causalities as edges. It represents causal relationship between concepts. Let $C_1$, $C_2$, …,$C_n$ be the nodes of an FCM. A = ($a_1$,$a_2$,…,$a_n$) where $a_i \in \{0, 1\}$. A is called instantaneous state vector and it denotes the on-off position of the node at an instant.

**2.3 Definition**: Let $C_1$, $C_2$,…,$C_n$ be the nodes of an FCM. Let $C_1C_2$, $C_2C_3$, $C_3C_4$,…, $C_iC_j$ be the edges of the FCM (i *j). Then the edges form a directed cycle. An FCM is said to be cyclic if it possesses a directed cycle. An FCM is said to be acyclic if it does not possess any directed cycle.

**2.4 Definiton:** An FCM with cycles is said to have a feedback.

**2.5 Definition**: Let $C_1C_2$, $C_2C_3$, $C_3C_4$,…, $C_iC_j$ be a cycle. When $C_i$ is switched on and if the causality flows through the edges of a cycle and if it again causes $C_i$ , we say that the dynamical system goes round and round. This is true for any node $C_i$, for i = 1, 2, …,n. The equilibrium state for this dynamical system is called the hidden pattern.

**2.6 Definition:** If the equilibrium state of a dynamical system is a unique state vector, then it is called a fixes point.

**Example:** Consider a FCM with $C_1$, $C_2$,…,$C_n$ as nodes. For example let us start the dynamical system by switching on$C1$. Let us assume that the FCM settles down with C1 and Cn on i.e. the state vector remains as (1, 0, 0, …, 0, 1) this state vector(1, 0, 0, …, 0, 1) is called the fixed point.

### 3.1. Introduction

FCMs are used to model several types of real world problem. FCMs have a major role to play mainly when the data concerned is an unsupervised one. In this section we analyze the key motive of happiness using FCM.

### 3.2. Finding out the hidden pattern

An expert spells out the five major concepts relating to the cause of happiness

C1 - Relating means Do things for others.
C2 –  Giving means connect with people.
C3 – Exercising means Take care of your body .
C4 –Appreciating means Notice the world around.
C5 – Trying out means Keep learning new things.

### C1Relating:

People with strong and broad social relationships are happier, healthier and live longer. Close relationships with family and friends provide love, meaning, and support and increase our feelings of self worth. Broader networks bring a sense of belonging. So taking action to strengthen our relationships and build connections is essential for happiness.

### C2. Giving:

Helping others is not only good for them and a good thing to do, it also makes us happier and healthier too. Giving also connects us to others, creating stronger communities and helping to build a happier society for everyone. And it's not all about money - we can also give our time, ideas and energy. So if you want to feel good, do good!

### C3. Exercising:

Our body and our mind are connected. Being active makes us happier as well as being good for our physical health. It instantly improves our mood and can even lift us out of a depression. We don't all need to run marathons - there are simple things we can all do to be more active each day. We can also boost our well-being by unplugging from technology, getting outside and making sure we get enough sleep!

### C4. Appreciating:

Ever felt there must be more to life? Well good news, there is! And it's right here in front of us. We just need to stop and take notice. Learning to be more mindful and aware can do wonders for our well-being in all areas of life - like our walk to work, the way we eat or our relationships. It helps us get in tune with our feelings and stops us dwelling on the past or worrying about the future - so we get more out of the day-to-day.

### C5.Trying out:

Learning affects our well-being in lots of positive ways. It exposes us to new ideas and helps us stay curious and engaged. It also gives us a sense of accomplishment and helps boost our self-confidence and resilience. There are many ways to learn new things - not
just through formal qualifications. We can share a skill with friends, join a club, learn to
sing, play a new sport and so much more.

The directed graph is drawn with the expert opinion where C1, C2, C3, C4, C5,are taken as nodes and causalities as edges.
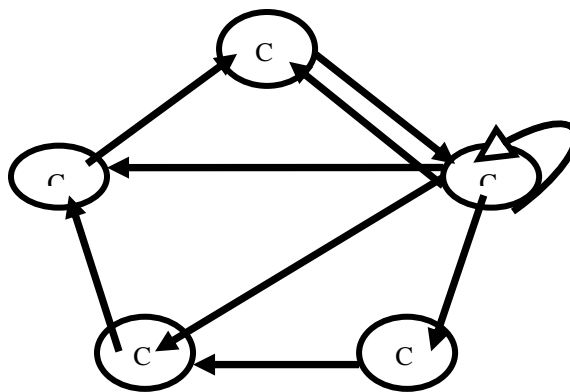


Fig. 1: Relational directed graph

$$A = \begin{array}{c} \\ c_1 \\ c_2 \\ c_3 \\ c_4 \\ c_5 \end{array} \begin{array}{ccccc} c_1 & c_2 & c_3 & c_4 & c_5 \\ \begin{bmatrix} 0 & 1 & 0 & 0 & 0 \\ 1 & 1 & 1 & 1 & 1 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 & 0 \end{bmatrix} \end{array}$$

We discuss the case when the second node that is Giving activities is in on state. Since the percentage response shows that it plays an important role in short length happiness. Therefore in this case we allow $C_2$ to pass on M.

Input the vector A = (01000)
AM = (11111) = $A_1$
A1M = (22122)
$\hookrightarrow$ (11111) = A2=A1

## 3. Conclusion (10pt)

The hidden pattern is found out using FCM. When we allow the second node is in on state and allow it to pass on M, we get all the nodes in on state. This gives us a conclusion that when the Giving activities is in ON state automatically all other making the others happy.Commenly urban peoples not interested giving anything to other. Here giving means not only money, like affection, carrying to other, responsible to other and society etc. Helping others is not only good for them and a good thing to do, it also makes us happier and healthier too. Giving also connects us to others, creating stronger communities and helping to build a happier society for everyone. Thus using FCM we have found out the key motive of happiness with thehelp of experts opinion.

## 4.Acknowledgement

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