CHAPTER VII

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APPLICATION OF NEUTROSOPHIC COGNITIVE MAPS IN THE ANALYSIS OF THE PROBLEMS FACED BY GIRL STUDENTS WHO GOT MARRIED DURING THE PERIOD OF STUDY

Introduction

India still continues to be one of the countries in Asia having the lowest female literacy rate. This low rate of female literacy not only has negative impact on the welfare of the women but also on the female welfare and the economy of the country as a whole. Thanks to the government's commitment to improving literacy rates, there has been progress in educational attainment of both sexes over the past several decades. As per 1971 censes only 22 per cent of women were literate but the rate improved to 39 per cent (1991 census) (Register General and Census Commissioner (RGCC), 1993). Despite such growth in female literacy rates, there are many barriers to female education in India. Poverty, lack of adequate educational institutions, illiterate parents and early marriage are some of such barriers.

Application Of Neutrosophic Cognitive Maps

In order to analyse the problems faced by girl students who got married during the period of study, data were collected from 100 such students pursuing Under Graduate and Post Graduate courses in Arts and Science colleges located in Coimbatore city, TamilNadu. Based on the opinion given by the majority of respondents , the following factors were identified:

M_1 - Changes on routine study hours

M_2 – Changes in family environment

M_3 – Changes in conveyance and travel time

M_4 – Changes in health condition

M_5 – Changes in economic condition

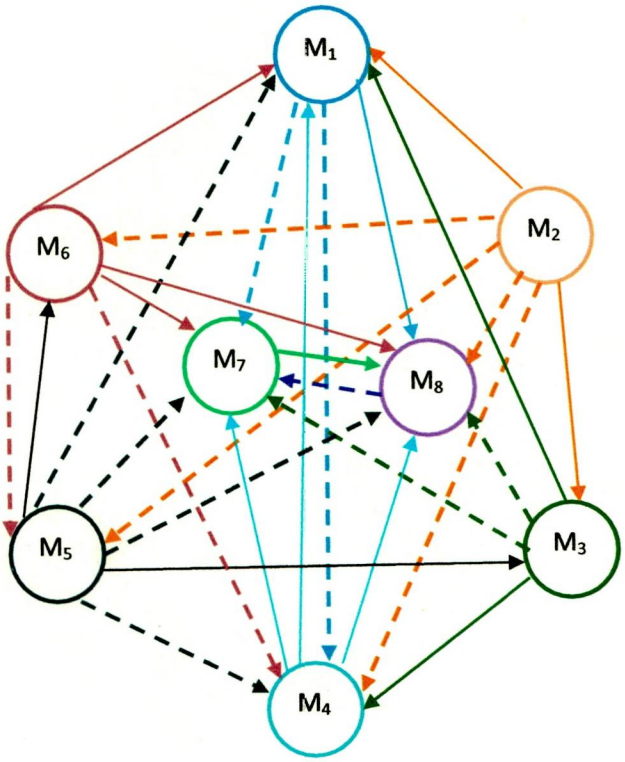
M_6 – Burdened with family responsibility

M_7– Lack of concentration in studies

M_8 – Changes in academic performance

Based on the opinion about the existence of causal relationship between two nodes, weightage was assigned. When majority of the respondents opined the existence of casual relationship, weightage between two nodes was assigned as 1, otherwise the weightage was assigned as 0. In case, if the majority of the respondents were uncertain about the existence (or) non existence of casual relationship between two nodes, then weightage was assigned as I, which denotes "Indeterminant".

The Neutrosophic Cognitive Maps and the NCM adjacency matrix are presented below:



$$N = \begin{array}{c} \\ M_1 \\ M_2 \\ M_3 \\ M_4 \\ M_5 \\ M_6 \\ M_7 \\ M_8 \end{array} \begin{array}{c} \begin{array}{cccccccc} M_1 & M_2 & M_3 & M_4 & M_5 & M_6 & M_7 & M_8 \end{array} \\ \begin{pmatrix} 0 & 0 & 0 & I & 0 & 0 & I & 1 \\ 1 & 0 & 1 & I & I & I & I & I \\ 1 & 0 & 0 & 1 & 0 & 0 & I & I \\ 1 & 0 & 0 & 0 & 0 & 0 & 1 & 1 \\ I & 0 & 1 & I & 0 & 1 & I & I \\ 1 & 0 & 0 & I & I & 0 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & I & 0 \end{pmatrix} \end{array}$$

Here we preferred to study the effect of the problem "Changes in family environment" on the other factors. For this purpose, we study the effect of the state vector X = (0 1 0 0 0 0 0 0) on the dynamical system N.

XN = (1 0 1 I I I I I)

after updating and thresholding we get,

XN = (1 1 1 I I I I I) = X_1 (say)

X_1N = (1 0 1 1 I I 2I 1)

after updating and thresholding we get,

X_1N = (1 1 1 1I I I 1) = X_2 (say)

X_2N = (1 0 1 1 I I 1 1)

after updating and thresholding we get,

X_2N = (1 1 1 1 I I 1 1) = X_3 (say)

X_3N = (1 0 1 1 I I 1 1)

after updating and thresholding we get,

X_3N = (1 1 1 1 I I 1 1) = X_4 (say)

which is a fixed point.

From the above it is inferred that the factor "Changes in family environment" has a direct effect on other factors "Changes on routine study hours", "Changes in conveyance and travel time", "Changes in health condition", "Lack of concentration in studies" and "Changes in academic performance" while

"Changes in economic condition" and " Burdened with family responsibility" are an indeterminate concept to it. Likewise it is possible to assess the effect of each factor on the other factors.

Conclusion:

The concept of Neutrosophic Cognitive Map can be used to find concrete solutions to various issues. As it gives a better insight into the mindset of the target group, the policy makers are well equipped to frame and modify policies that facilitate desired outcomes. Applications of Neutrosophic Cognitive Maps gained momentum, in the recent past, in the fields of sociology, psychology, consumer behavior, marketing, banking, insurance and so on.