

SUMMARY & CONCLUSION

SUMMARY AND CONCLUSION

Fuzzy Cognitive Maps are symbolic representation for the description and modeling of the complex system. Fuzzy Cognitive Maps have been used for decision analysis and operation research.

Fuzzy Cognitive Maps consist of concept nodes and weighted arcs, which are graphically illustrated as a signed weighted graph with feedback. Signed weighted arcs, connecting the concept nodes, represent the causal relationship that exists among concepts. In general, concepts of a FCM, represent key-factors and characteristics of the modeled complex system. This graphic display shows clearly which concepts influences with other concepts and what this degree of influence is.

Most of the fuzzy models which deal with the analysis and study of unsupervised data make use of Fuzzy Cognitive Maps. The neutrosophic models are fuzzy models that permit the factor of indeterminacy. It also plays a significant role and utilizes the concept of Neutrosophic Cognitive Maps.

In this thesis, Fuzzy Cognitive Maps, Fuzzy Cognitive Bimaps, Fuzzy Cognitive Interval Maps, Super Fuzzy Cognitive Maps and Neutrosophic Cognitive Maps are studied with some of its applications to real world problems.

The first chapter is devoted to the study of definitions and basic concepts of fuzzy matrices, bimatrices, fuzzy bimatrices, interval matrices, interval bimatrices, fuzzy interval matrices and neutrosophic matrices.

Chapter II deals with the basic definitions and properties of Fuzzy Cognitive Maps, Fuzzy Cognitive Bimaps, Fuzzy Cognitive Interval Maps, Super Fuzzy Cognitive Maps and Neutrosophic Cognitive Maps.

Application of Fuzzy Cognitive Maps in real life problems facilitates deriving scientific and logical solutions.

The following are such real life problems studied in this thesis:

1. Application of Fuzzy Cognitive Maps in the analysis of the factors influencing Investment decision.
2. Application of Fuzzy Cognitive Bimaps in the analysis of factors influencing the academic performance of higher secondary students.
3. Application of Fuzzy Cognitive Interval Maps in the analysis of the problems encountered by the coffee cultivators in Kodai hills.
4. Application of Super Fuzzy Cognitive Maps in the analysis of opinion about the employments in 'Information Technology Sector'.
5. Application of Neutrosophic Cognitive Maps in the analysis of the problems faced by girl students who got married during the period of study.

The details of these problems are presented in Chapters III, IV, V, VI and VII respectively.