Conclusions

“A slight variation in the axioms at the foundation of a theory can result in huge changes at the frontier.”

—Stanley P. Gudder

Summary

The detail contribution of the thesis is portrayed as follows:

In chapter 2, logarithmic fuzzy information measures of type-I and type-II are introduced and their validity have been studied. The logarithmic discrimination measures and logarithmic symmetric discrimination measures for fuzzy sets are also defined. The efficiency of the proposed logarithmic fuzzy symmetric discrimination measure is illustrated mathematically.

In chapter 3, exponential fuzzy information measure, fuzzy discrimination and symmetric measures are proposed and verified. The proposed method is applied to pattern recognition and diagnosis of crop disease.

In chapter 4, tangent inverse trigonometric information measure, two measures of weighted trigonometric and hyperbolic fuzzy information are developed and studied their applications in optimization principle.
In chapter 5, fuzzy mean code word lengths are defined and their bounds have been studied. The monotonic behaviour of these code word lengths are illustrated graphically.

In chapter 6, new exponential intuitionistic fuzzy information measure is developed and their effectiveness is illustrated mathematically. The proposed measure is applied in assessment of service quality of vehicle insurance companies.

In chapter 7, new intuitionistic fuzzy similarity and information measures are developed. An intuitionistic fuzzy information measure method for MCDM problems is proposed. The results are compared with the existing measures. Finally, it can be concluded that the proposed measure reduces the complexity while evaluating the results and hence it is more effective and efficient.
Future Scope

In this work, we give a framework of the transcendental information measures and show how to implement it for practical applications. Since the information measure is powerful and easy to use, from our perspective, several further research problems are well worth investigating within the context of the information measures for FSs and IFSs environment:

(1). In future, there are possibilities to develop new information measures for interval-valued intuitionistic fuzzy sets (IVIFSs) and hesitant fuzzy sets (HFSs).

(2). The proposed information measures can implement standard application of divergence measures, information improvement, image processing and strategic decision making problems.

(3). The proposed information can be used for multiple criteria decision making methods, viz., ELECTRE, PROMETHEE and TOPSIS.

(4). There are possibilities to apply proposed information measures on intuitionistic fuzzy linguistic term sets (IFLTSs) and hesitant fuzzy linguistic term sets (HFLTSs).