Chapter 8

Conclusion

Nowadays, uncertainty and impreciseness are present in almost all systems. An mPFG can be used to represent the real world problems involving various knowledge and uncertainty. An mPFG is a generalized structure of a BFG which provides a framework with more precision, flexibility and compatibility to a system when working with more than one agreement. Thus, mPFGs are the most important research area for the researchers. Application of mPFG can be found in image capturing, image segmentation, image shrinking, data mining, communication, planning, scheduling, etc.

The first chapter is the introductory chapter of the thesis. In Chapter 2, we defined superstrong and strong mPF vertex of mPFGs using the concept of strong mPF arc, strength of connectedness of path etc. Next we discussed their related result. Next we studied several properties on these vertices. An application of strong and superstrong mPF vertex problem is also given at the end.

In Chapter 3, at first we discussed mPFP, mPFC in an mPFG. Here we defined strongest and strong mPFP, α-strong, β-strong, δ-strong and δ^*-strong mPFE of mPFG and their related result.

In Chapter 4, an mPF model is a generalization of the fuzzy model. Since real-world research and modelling often involves multi-agent, multi-attribute, multi-polar knowledge, multi-object, insecurity and/or limitation processes, therefore mPFG is very extremely useful. In this paper, we introduced genus in mPFG on the surface of the sphere and mPF genus values.

In Chapter 5, we have introduced mPF detour g-distance, mPF detour g-boundary nodes, mPF detour g-interior nodes in mPFGs and properties of these. We initiated

theorems on mPF detour g-interior node, mPF detour g-boundary node, mPF cut node in mPFG, using maximum mPF spanning tree.

In Chapter 6, we explain the connectivity index in mPFG. The boundary of negative and positive connectivity index of a mPFG are explained. Connectivity index in edge and vertex deleted mPFG and their properties has been investigated. The average connectivity index in mPFG and the nodes mPFCEN, mPFCRN, mPFCNN are recount with their properties.

In Chapter 7, the fresh Dombi mPFG idea is launched. The ring sum, join and direct product of two Dombi mPFG has been proven to be the Dombi mPFG. In particular, the lexicographic product, the strong product, the semi-strong product and the Cartesian product of two Dombi mPFG are not Dombi mPFG. The Dombi mPFG can portray all types of networks uncertainty well.

We are extending our research work to defined block on mPFG and its properties. Also, the applications of mPFG on real life problems are presented. The connectivity index on mPFG is defined and its properties as well as its applications on real life problems are investigated. Then we are extending our research work to chromatic number of mPFG, m-polar fuzzy soft graph structures, roughness in m-polar fuzzy graph structures etc. The concepts of superstrong and strong m-polar fuzzy vertices along with distance and center of m-polar fuzzy graphs are defined and presented their properties as well as applications on real life problems.

The natural extension of these work are

(i) mPF soft hypergraphs,
(ii) mPF rough graphs,
(iii) mPF soft graphs,
(iv) mPF soft competition graphs,
(v) Applications of mPF soft graphs on decision making problems, etc.