

Chapter 6. Conclusions

In this thesis, we propose three methods to deal with vague data's computations and their statistic testing hypothesis procedure. In Chapter 3 we test fuzzy mean of discrete and continuous type fuzzy sample data. The definitions of fuzzy mean for two types of fuzzy data are proposed. Using these definitions we are able to set up the fuzzy testing hypothesis such as fuzzy equal and the fuzzy belong. These testing processes are very useful for decision making in a fuzzy system.

In Chapter 4 we use new conception on testing hypotheses of fuzzy mean and fuzzy variance with interval data. Especially we give definition of sample variance on interval data by centroid and radius simultaneously. We do the testing hypothesis of sample mean and sample variance by the help of classical methods, say, t -test and F -test.

In Chapter 5 we discuss how to test interval sample data in another point of view. We give an innovative concept to define sample variance of interval data. As for testing, we test sample mean on two ends – the left end and the right end –simultaneously. With the help of operation research, we compute interval sample variance in an innovative way and do the testing work separately.

However, there are still some problems we need to investigate in the future:

1. We can further the research on data simulation so that we may understand features of the fuzzy linguistic, multi-facet assessment, and the balance of the moving consensus. Moreover, the choice of different significant α -cut will influence the statistical result. An appropriate criterion for selecting significant

α -cut should be investigated in order to reach the best common agreement of human beings.

2. There are other types of membership functions we could explore in the future. For the fuzzy mode of continuous type, we can extend the uniform and triangular types of membership functions to non-symmetric or multiple peaks types.

Because of complicated social structure, data for all kinds of purpose will be demanded more humanistic. Nowadays, sample data are no longer single value but interval form. Next subject is how to use these data to analyze, compare, and test hypothesis. If we make fixed comparative method, then we might be far away from real situation when we face distinct properties. In this lecture, we propose concept of interval-valued normally distributed. We try to build a standard way, with the help of classical statistics to solve problems by original sample data. Actually, we still have some problems to overcome such as how to make estimator more effective, how to set acceptable comparing method and so forth. We deeply hope to solve real world problems to make our life better.