

## **ABSTRACT**

*Construction industry is an industry that involves many parties in it. The Owner of the Project, Construction Management Consultant, General Contractor, and Design and Planning Consultant are the main parties in a construction project. General Contractor as the party that undertakes the construction project always overshadowed by various things of uncertainty and risks, such as cost overruns, delay of the project, the quality of the works produced problems, claims, payment failure by the Owner, and so forth. General Contractor shall perform a variety of ways to minimize the risks. Appointment of subcontractors is an effort of the General Contractor to minimize risks although the selection process of the subcontractors fraught with risks. There is a theory that can be used in dealing with the problem of determining the right subcontractor for the project. It is called the fuzzy set theory. In general, fuzzy set theory in this thesis is used to transform the fuzzy linguistic assessment that often used by the decision makers.*

*In this thesis, a model selection of subcontractors based on fuzzy set theory was made by using spreadsheet program. Previously, the author conducted a research to find important factors in the selection of subcontractors. The author conducted a survey on 14 (fourteen) experts from several local general contractor that located in Jakarta. Then, the author conducted a t-test to determine which factors that are considered as an important factor in the selection of subcontractors. These factors were used as an input for the model. Then, the model was tested in a real construction project. The result shows that the model needs to be modified. Once finished, the author made a couple of illustrations to test the model again. After that, the author analyzes the sensitivity of the model to find out how sensitive the model is.*

**Key Words:** *fuzzy set, selection of subcontractors, important factor in the selection of subcontractors, model selection of subcontractors*