

## ABSTRACT

Decision support system using decision tree classification can be used for stock trading. Technical analysis is a stock analysis method which solely based on interpreting stock's price chart movement or trend. Historical stock prices and volume are used as variable input. This system used decision tree method. The system was built based on financial market technical analysis indicators, one basic system was built on a single technical analysis indicator only which based on Exponential Moving Average and the other system was built on multiple indicators that based on Exponential Moving Average, Moving Average Convergence Divergence, Relative Strength Index, Money Flow Index, On Balance Volume, and parabolic Stop and Reverse. These indicators were arranged into decision tree based to classify each price into buy, hold, and sell classes which represented decisions in trading. The research purpose was to observe the enhancement in decision making at technical stock trading by comparing the single indicator decision tree against multiple indicators. Decision classes that were created by those two systems then are measured using parameters of profitability, geometric mean return, and cumulative wealth index. Furthermore sensitivity analysis was added into profitability analysis to obtain more positive value trading in decision making. Profitability value showed 89.93% enhancement, geometric mean value showed (-33.2%) enhancements, and cumulative wealth index value showed 29.5% enhancement using multiple indicator. Two out of three parameters gave positive enhancement.

*Keywords.* Stock Trading, Decision Support System, Decision Tree, Classification, Technical Analysis, Profitability Analysis, Sensitivity Analysis.