

INTISARI

Sejak COVID-19 dideklarasikan sebagai sebuah pandemi pada awal tahun 2020 oleh WHO, terjadi pergolakan pada pasar modal global, tidak terkecuali di Indonesia. Berdasarkan data laporan tahunan yang dirilis oleh Bursa Efek Indonesia (BEI) tahun 2021, volume transaksi Indeks Harga Saham Gabungan (IHSG) mengalami penurunan signifikan, mencakup industri properti yang menurun hingga 33% dan industri barang konsumsi hingga 9.96%. Kontradiktif dengan hal ini, jumlah investor baru yang muncul sejak tahun 2020 mengalami peningkatan pada tahun 2021, yaitu sebesar 92.99% (Kustodian Sentral Efek Indonesia, 2021). Oleh karena itu, perlu dilakukan penelitian terkait proses peramalan harga saham yang dapat membantu para investor muda melakukan prediksi harga saham dengan lebih mudah dengan harapan membangkitkan kembali produktivitas aktivitas jual beli modal di pasar saham Indonesia serta meningkatkan pertumbuhan ekonomi negara.

Pada penelitian ini, dilakukan optimalisasi penggunaan *software* Palisade DecisionTools Suite versi 8.1.1 dengan tujuan melihat kemampuan *software* dalam melakukan peramalan dan membandingkan akurasi metode yang tersedia pada *software* terhadap standar akurasi yang dipaparkan oleh Lewis (1982). Lewis (1982) menyampaikan standar akurasi metode peramalan berdasarkan metrik MAPE baru dapat dikatakan sangat akurat jika bernilai minimal 10%. Peramalan dilakukan menggunakan metode *distribution fitting*, *moving average*, *exponential smoothing*, dan *neural network* terhadap harga penutupan saham mingguan saham lima emiten LQ45 selama periode Januari 2015 hingga Desember 2019. Pemilihan lima emiten didasarkan pada saham dengan kapitalisasi terbesar, prospek masa depan perusahaan terbaik serta emiten yang konsisten terdaftar pada LQ45 sejak tahun 2003. Peramalan pada tiap metode diawali dengan proses identifikasi karakteristik data, proses transformasi data, pengujian dan analisis model, peramalan, dan analisis hasil peramalan.

Hasil peramalan menunjukkan bahwa semua metode peramalan yang tersedia pada *software* Palisade DecisionTools Suite versi 8.1.1 sudah sangat akurat dengan nilai rata-rata MAPE metode *distribution fitting*, metode *moving average*, metode *exponential smoothing*, dan metode *neural network* secara berurutan sebesar 6.97%, 7.09%, 6.86% dan 6.41% dengan metode *neural network* memiliki akurasi terbaik yang ditandai oleh nilai MAPE terkecil.

Kata Kunci: Peramalan Harga Saham, Palisade DecisionTools Suite versi 8.1.1, *Distribution Fitting*, *Moving Average*, *Exponential Smoothing*, *Neural network*.

ABSTRACT

Since COVID-19 was declared a pandemic in early 2020 by WHO, there has been turmoil in global capital markets, and Indonesia is no exception. Based on the annual report data released by the Indonesian Stock Exchange (IDX) in 2021, the transaction volume of the Indonesia Composite Index (IDX Composite) experienced a significant decline, including the property industry which decreased by 33% and the consumer goods industry by 9.96%. Contrary to this, the number of new investors who have emerged since 2020 has increased in 2021 by 92.99% (Indonesian Central Securities Depository, 2021). Therefore, it is necessary to conduct research related to the stock price forecasting process that can help new investors make stock price predictions more easily in the hope of reviving the productivity of buying and selling capital activities in the Indonesian stock market and increasing the country's economic growth.

In this study, optimization of the use of the Palisade DecisionTools Suite software version 8.1.1 was carried out with the aim of seeing the ability of the software in forecasting and comparing the accuracy of the methods available in the software to the accuracy standard described by Lewis (1982). Lewis conveyed that the standard accuracy of forecasting methods based on the MAPE metric can be said to be very accurate if it has a minimum value of 10%. Forecasting is done using distribution fitting, moving average, exponential smoothing, and neural network methods on the weekly closing price of shares of five LQ45 issuers during the period January 2015 to December 2019. The selection of the five issuers is based on the stock with the largest capitalization, the best future prospect for the company and the issuer, which has been consistently registered in LQ45 since 2003. Forecasting in each method begins with the identification of data characteristics, data transformation process, model testing and analysis, forecasting, and analysis of forecasting results.

The forecasting results show that all forecasting methods available in the Palisade DecisionTools Suite software version 8.1.1 are very accurate with the average MAPE value of the distribution fitting method, moving average method, exponential smoothing method, and neural network method respectively 6.97%, 7.09 %, 6.86% and 6.41% with the neural network method having the best accuracy which is indicated by the smallest MAPE value.

Keywords: *Stock Price Forecasting, Palisade DecisionTools Suite version 8.1.1, Distribution Fitting, Moving Average, Exponential Smoothing, Neural network.*