

The Man-hour Estimation Models & Its Comparison of Interim Products Assembly for Shipbuilding

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Abstract—The Man-hour of products is the basic data for rational production plan. To estimate the man-hour of ship's interim products both reliably and accurately, three models for man-hour estimation are proposed in this paper. They are Simple Linear Regression Model and Multiple Linear Regression Model, as well as Artificial Neural Network Model. To evaluate the performance of the models, mathematical methods were used to express the reliability and accuracy of each model. The reliability of the model was represented both by the consistency of the error center with "0" and the consistency of the error distribution with normal distribution. The accuracy of the model was represented by the Residual Sum of Squares. It is verified that the Model of Neural Network can elicit more accurate and reliable results than others via analysis and comparison.

Keywords—Man-hour, Shipbuilding, Neural network, Linear regression model

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