

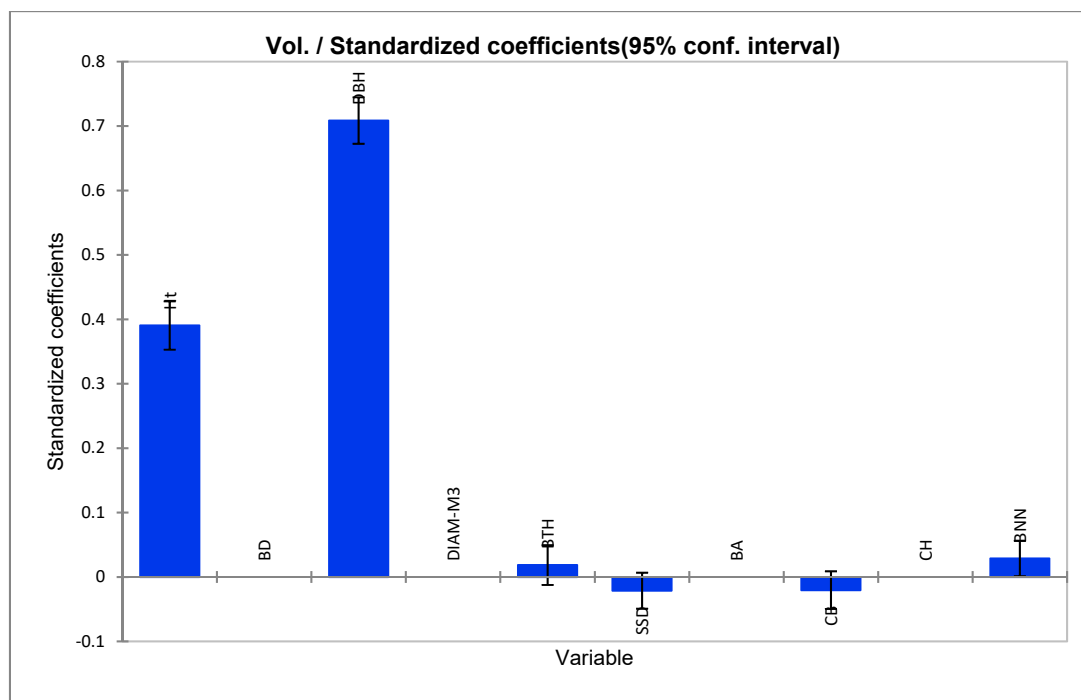


Figure S1: Regression analyses on 11 morphological traits of Korean pine grown at Naozhi orchard. Tree volume was taken as independent variable and 10 trunk and branch traits as explanatory variables. The analysis was done in XLSTAT software version 2019-1, (<https://www.xlstat.com/en/news/xlstat-version-2019-1>)

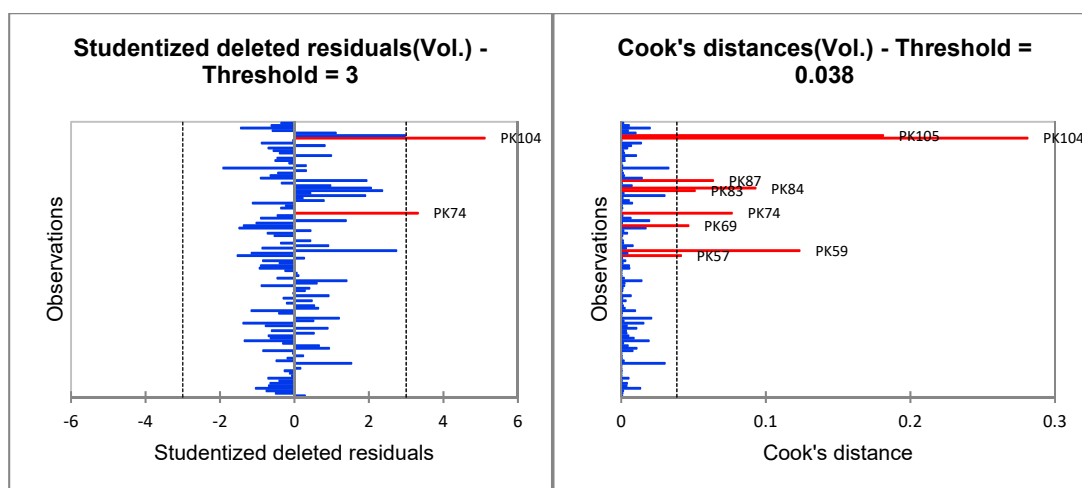


Table S1: Goodness of fit statistics (Vol.):

Observations	110.000
Sum of weights	110.000
DF	104.000
R ²	0.981
Adjusted R ²	0.980
MSE	0.020
RMSE	0.141
MAPE	58.507
DW	1.722
Cp	2.106
AIC	-425.501
SBC	-409.298
PC	0.021
Press	2.392
Q ²	0.978

Where Df was degree of freedom, R² and adjusted R² measured variation proportion in the dependent variable (volume); MSE, mean squared error, RMSE, Root Mean Square Error (RMSE), (MAPE)Mean Absolute Percentage Error, used to evaluating and comparing model performance, Durbin Watson (DW) tested for autocorrelation in the residuals, Mallows Cp for model selection; (AIC) Akaike information criterion estimating of in-sample prediction error; (SBC) Bayesian information criterion (BIC) or Schwarz information criterion (also SIC,SBIC) a criterion for model selection among a finite set of models; (PRESS) predicted residual error sum of squares a form of cross-validation used in regression analysis to provide a summary measure of the fit of a model and Q, Quality index, the ratio of the correlation coefficient (r) to the standard deviation

TableS2: Multicollinearity statistics on 11 morphological traits of Korean pine grown at Naozhi Orchard

	Ht	BD	DBH	DIAM-M3	BTH	SSD	BA	CB	CH	BNN
Tolerance	0.056	0.092	0.066	0.117	0.579	0.862	0.832	0.771	0.052	0.901
VIF	17.967	10.928	15.252	8.558	1.728	1.160	1.202	1.297	19.331	1.110