Summary of results obtained with Trees, Tree Bagging, Random Forest

All data (2000+2001)

Regression Tree

Cp = 0: max complexity

    Random split(70-30)

        With NUMBED (MSA, NUMBED, PRO, SELFFUNDINS, SQRFOOT, TAXEXEMPT) 41 t.n.

            RMSE = 9.875, R^2 = 0.951

        Without NUMBED (MCERT, MSA, SELFFUNDINS, SQRFOOT, TAXEXEMPT) 31 t.n.

            RMSE = 24.844, R^2 = 0.693

    10 fold CV

        With NUMBED

            RMSE = 11.60, R^2 = 0.937

        Without NUMBED

            RMSE = 23.736, R^2 = 0.729

Cp = automatic (cp=0.01)

    Random split(70-30)

        With NUMBED (NUMBED) 8 t.n.

            RMSE = 24.859, R^2 = 0.858

        Without NUMBED (MSA, SQRFOOT) 10 t.n.

            RMSE = 32.468, R^2 = 0.757

    10 fold CV

        With NUMBED

            RMSE = 13.93, R^2 = 0.912

        Without NUMBED

            RMSE = 24.970, R^2 = 0.698

Cp = 0.0017

    Random split(70-30)

With NUMBED (MSA, NUMBED) 14 t.n.

RMSE = 24.075, R^2 = 0.866

Without NUMBED (MSA, ORGSTR, SELFFUNDIS, SQRFOOT) 24 t.n.

RMSE = 32.800, R^2 = 0.752

10 fold CV

With NUMBED

RMSE = 12.291, R^2 = 0.930

Without NUMBED

RMSE = 24.046, R^2 = 0.723

Tree Bagging

Random split

With NUMBED (16 trees)

RMSE = 25.140, R^2 = 0.854, OOB= 10.041

Without NUMBED (44 trees)

RMSE = 34.164, R^2 = 0.731, OOB = 23.199

10 fold CV

With NUMBED (16 trees)

RMSE = 11.366, R^2 = 0.939

Without NUMBED (44 trees)

RMSE = 24.467, R^2 = 0.715

Random Forest

Random split

With NUMBED

RMSE = 25.409, R^2 = 0.851

Without NUMBED

RMSE = 42.35, R^2 = 0.587

10 fold CV

With NUMBED

RMSE = 10.284, R^2 = 0.949

Without NUMBED

RMSE = 26.579, R^2 = 0.674