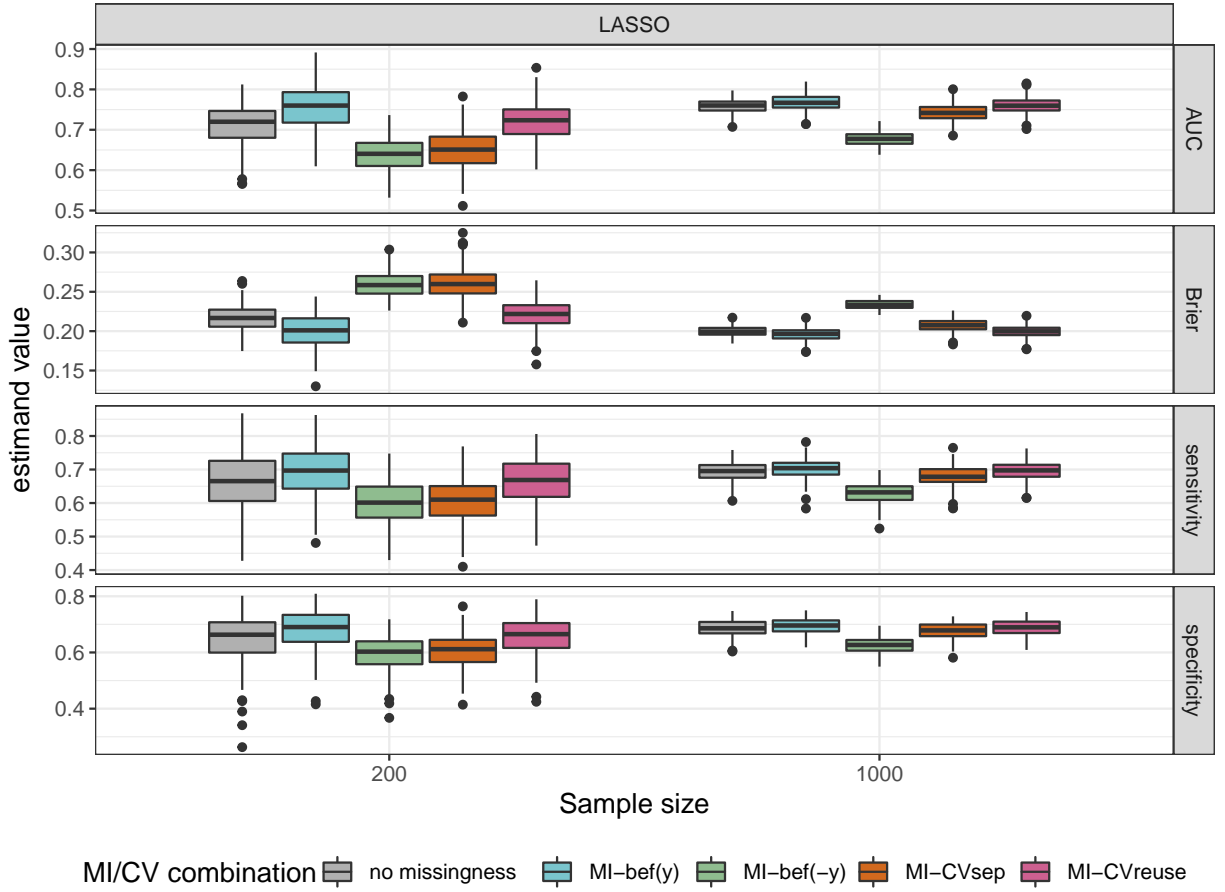


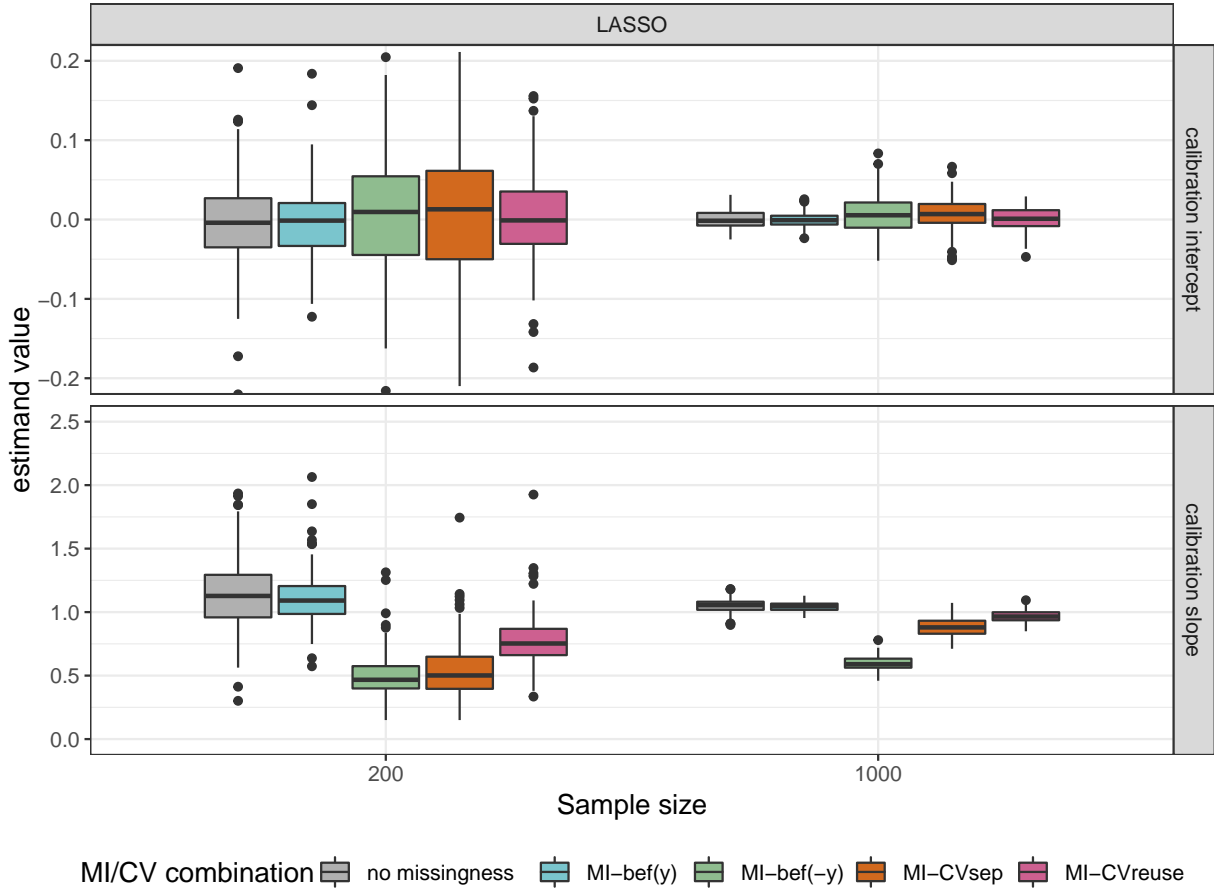
# How to validate regularized regression models on incomplete data

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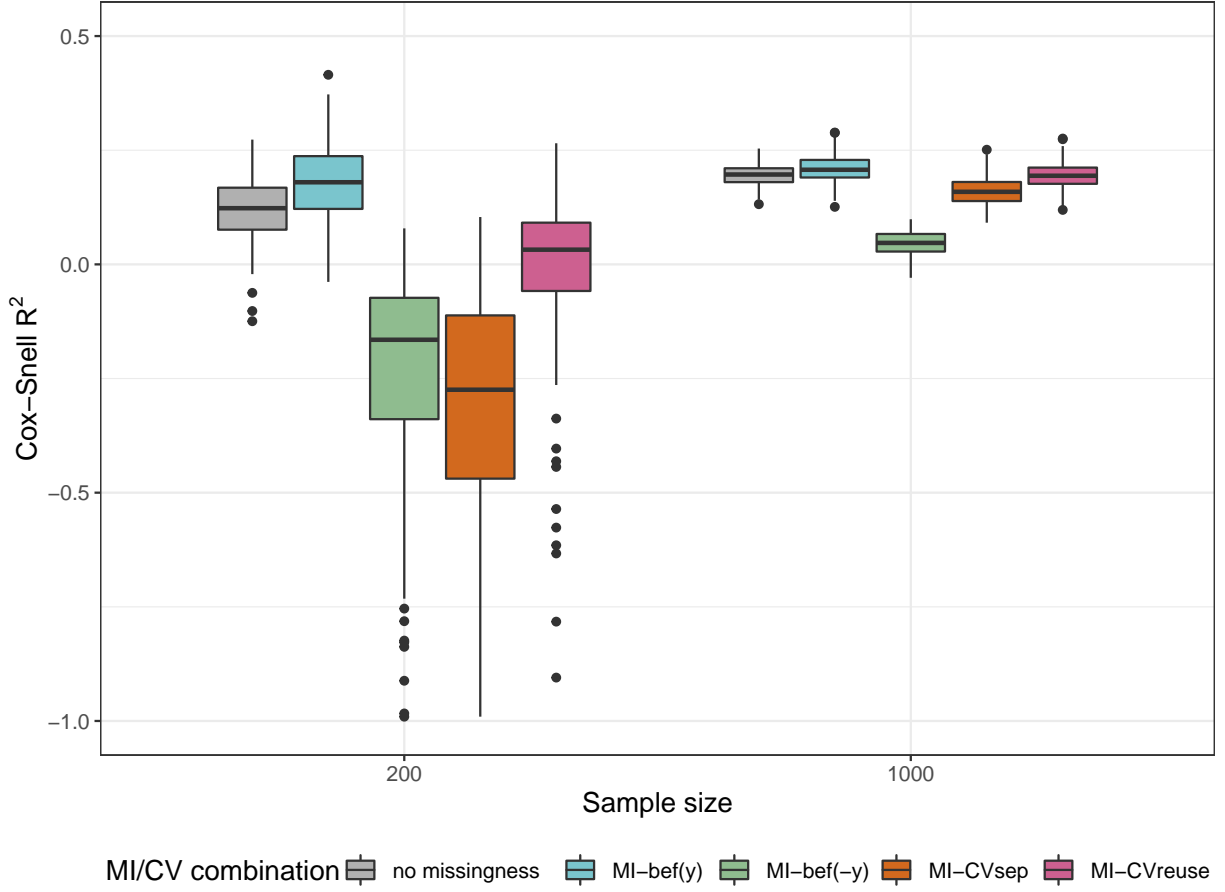
Additional file 1: Supplementary figures



**Supplementary figure 1:** The influence of sample size on the variance and bias of AUC, Brier scores, sensitivity and specificity. The model (LASSO), missingness proportion ( $p_{mis} = 0.75$ ) and missingness mechanism (MAR) are fixed.



**Supplementary figure 2:** The influence of sample size on the variance and bias of the calibration slopes and intercepts. The model (LASSO), missingness proportion ( $p_{mis} = 0.75$ ) and missingness mechanism (MAR) are fixed.



**Supplementary figure 3:** The influence of sample size on the bias and variance of  $R_{CS}^2$ . The model (LASSO), missingness proportion ( $p_{mis} = 0.75$ ) and missingness mechanism (MAR) are fixed.