

Table S1 Baseline Clinical and Pathological Characteristics of NSCLC Patients in Training and Test Sets

Characteristic	Train-Set (n=98)	Test-Set (n=42)	P value
Age			
Mean;Range	62.88;38-80	62.00;40-78	0.439
≥55y	76(77.6%)	35(83.3%)	
<55y	22(22.4%)	7(16.7%)	
Gender			0.203
Female	54(55.1%)	28(66.7%)	
Male	44(44.9%)	14(33.3%)	
BMI			0.951
Median (IQR)	23.06±3.29	24.03±3.26	
Smoking history			0.615
Negative	33(33.7%)	16(38.1%)	
Positive	65(66.3%)	26(61.9%)	
Maximum tumor diameter (cm)			0.787
Median (IQR)	3.0(2.5,4.0)	3.0(2.5,4.1)	
TNM stage			0.340
1	62(63.3%)	22(52.4%)	
2	22(22.4%)	10(23.8%)	
3	14(14.3%)	10(23.8%)	
Lymphatic			0.660
Negative	69(70.4%)	28(66.7%)	
Positive	29(29.6%)	14(33.3%)	
Pathological stage			0.079
1	31(31.6%)	7(16.7%)	
2	22(22.4%)	16(38.1%)	
3	45(46.0%)	22(45.2%)	
Pathological type			0.401
Adenocarcinoma	70(71.4%)	27(64.3%)	
Squamous carcinoma	28(28.6%)	15(25.7%)	
Tumor location			0.816
Superior lobe of right lung	22(22.4%)	11(26.2%)	
Middle lobe of right lung	17(17.3%)	8(19.0%)	
Inferior lobe of right lung	28(28.6%)	12(28.6%)	
Superior lobe of left lung	11(11.2%)	2(4.8%)	
Inferior lobe of left lung	20(20.5%)	9(21.4%)	
LVI			0.695
Negative	82(83.7%)	34(81.0%)	
Positive	16(16.3%)	8(19.0%)	
PNI			0.320
Negative	96(98.0%)	39(81.0%)	
Positive	2(2.0%)	8(19.0%)	
VPI			0.177
PL0	89(90.8%)	39(93.0%)	
PL1	8(8.2%)	2(4.8%)	
PL2	1(1.0%)	1(2.2%)	
Surgical method			0.189
Wedge resection	5(5.1%)	4(9.5%)	
Segmentectomy Lobectomy	91(92.9%)	35(83.5%)	
Pneumonectomy	2(2.0%)	3(7.0%)	
Postoperative chemotherapy			0.970
Negative	40(40.8%)	17(40.5%)	
Positive	58(59.2%)	25(59.5%)	
Postoperative targeted therapy			0.719
Negative	31(32.6%)	12(28.6%)	
Positive	67(68.4%)	30(71.4%)	
Status			0.908
No recurrence	64(65.3%)	27(64.3%)	
Recurrence	34(34.7%)	15(35.7%)	

Table S2 Baseline Quantitative Parameters of NSCLC Patients in Training and Test Sets

Quantitative parameters	Train-Set (n=98)	Test-Set (n=42)	P value
ANIC(%), Mean±SD	21.38±3.45	21.87±4.15	0.328
VNIC(%), Mean±SD	29.74±9.12	29.17±8.38	0.721
ΔNIC, Median (IQR)	7.03(3.36,12.06)	7.53(3.08,12.54)	0.235
NIC Ratio, Median (IQR)	1.39(1.17,1.72)	1.18(1.05,1.48)	0.008
Z _{eff} , Median (IQR)	8.02(7.85,8.15)	7.975(7.79,8.11)	0.425
Plan-CT, Mean±SD	38.78±8.68	36.19±8.87	0.110
A-CT, Mean±SD	60.62±13.68	59.09±19.77	0.651
V-CT, Mean±SD	64.19±12.77	62.64±16.85	0.595
A-CER(%), Median (IQR)	0.52(0.28,0.82)	0.55(0.24,0.94)	0.787
V-CER(%), Median (IQR)	0.65(0.45,0.90)	0.66(0.46,0.98)	0.609
ALB, median (IQR)	40.10(37.93, 42.93)	39.80(38.03, 42.30)	0.911
WBC, median (IQR)	6.32(5.22, 7.94)	6.81(6.09, 8.10)	0.136
NEU, median (IQR)	3.83(2.94, 5.18)	4.24(3.47, 5.31)	0.136
ALC, median (IQR)	1.71(1.43, 2.08)	1.68(1.36, 2.13)	0.718
MO, median (IQR)	0.40(0.34, 0.54)	0.43(0.35, 0.56)	0.326
RBC, median (IQR)	4.46(4.05, 4.75)	4.43(4.21, 4.69)	0.895
NLR, median (IQR)	2.12(1.53, 3.27)	2.21(1.81, 3.69)	0.150
ALI,median (IQR)	47.48 (31.93, 59.46)	41.63(26.55, 57.37)	0.249
LMR, median (IQR)	4.27(3.17, 5.60)	4.08(2.75, 5.42)	0.519
CEA, median (IQR)	3.275(1.99,7.37)	2.90(1.77, 4.67)	0.405

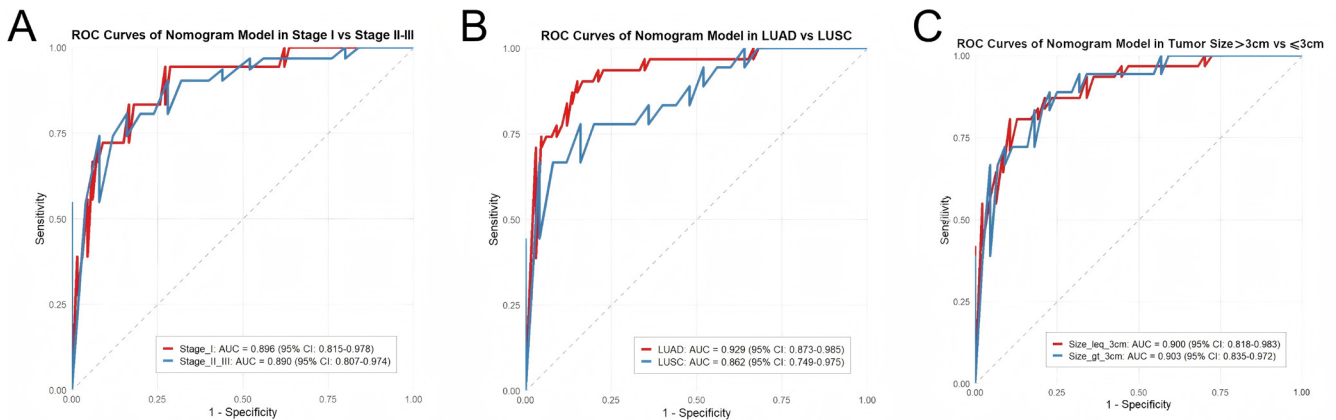
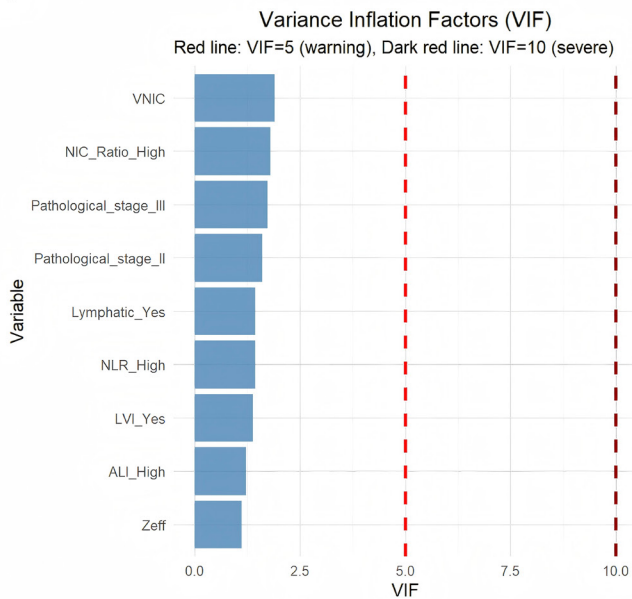


Figure S1 Subgroup analysis of the nomogram's predictive performance. ROC curves of the nomogram for predicting 3-year DFS in prespecified clinical subgroups: (A) histologic subtypes (LUAD *vs.* LUSC), (B) pathological stages (I *vs.* II–III), and (C) tumor size dichotomized at 3 cm (≤ 3 cm *vs.* > 3 cm). The AUC with 95% confidence interval and the P-value for between-group AUC comparison (DeLong's test) are displayed for each subgroup.

A



B

Spearman Correlation Matrix of Significant Variables

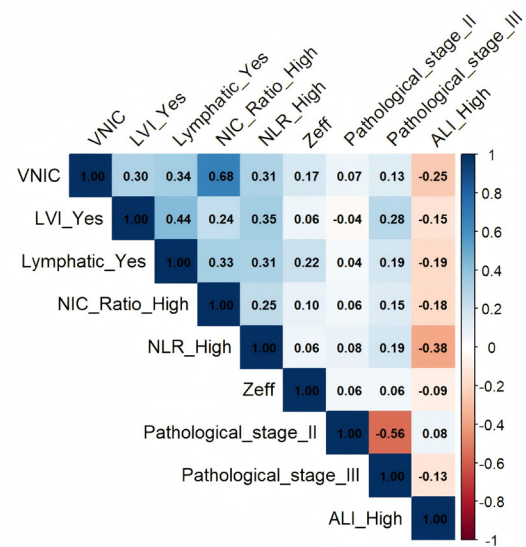


Figure S2 Assessment of multicollinearity among candidate predictors. (A) Bar plot of VIFs for all candidate predictors entering the multivariate analysis. All VIF values were well below the threshold of 5 (range: 1.11–1.90), indicating no substantial multicollinearity. (B) Correlation matrix (heatmap) depicting pairwise Pearson correlation coefficients (r) among the variables. The mean correlation was 0.208, the maximum observed correlation was 0.679, and no variable pair showed a strong correlation ($|r| > 0.7$), further confirming the absence of problematic multicollinearity.

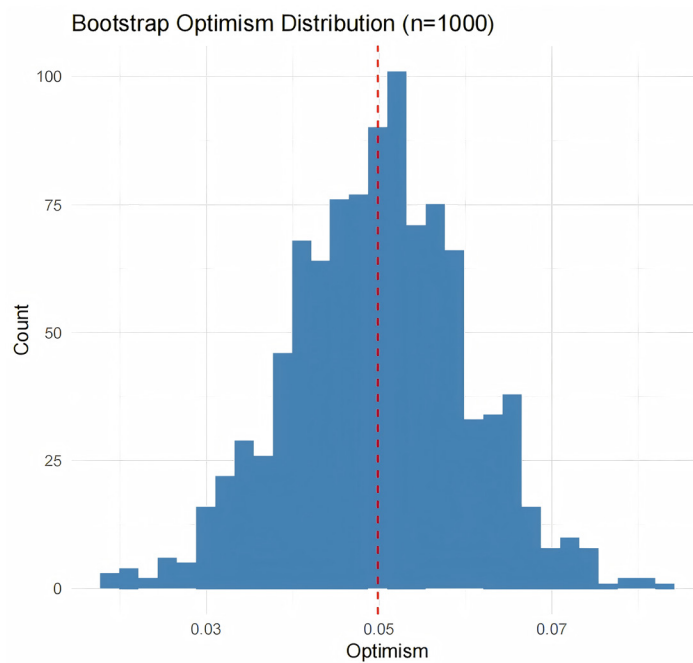


Figure S3 Assessment of model overfitting via bootstrap internal validation.

Table S3 Performance of the nomogram across key clinical subgroups

Subgroup	Patients, n (%)	Recurrence, n (%)	AUC (95% CI)	P for AUC difference
Histologic subtype				0.303
LUAD	97(69.3%)	31(32.0%)	0.929(0.873-0.985)	
LUSC	43(30.7%)	18(41.9%)	0.862(0.749-0.975)	
TNM stage				0.918
I	84(60.0%)	18(21.4%)	0.896(0.815-0.978)	
II-III	56(40.0%)	31(55.4%)	0.890(0.807-0.974)	
Tumor size				0.957
≤3 cm	62(44.3%)	18(29.0%)	0.900(0.818-0.983)	
>3 cm	78(55.7%)	31(39.7%)	0.903(0.835-0.972)	

AUC, area under the receiver operating characteristic curve; CI, confidence interval; LUAD, lung adenocarcinoma; LUSC, lung squamous cell carcinoma. Tumor size was dichotomized at the cohort's median diameter of 3 cm. The P-value for AUC difference refers to the comparison between subgroups within each category (DeLong's test).