

XLSTAT 2015.2.01.17315 - ROC Curves - on 5/3/2015 at 19:14:57

Event data: Workbook = QC_NN / Sheet = QC_NN / Range = QC_NN!\$C:\$C / 2457 rows and 1 column

Test data: Workbook = QC_NN / Sheet = QC_NN / Range = QC_NN!\$E:\$E / 2457 rows and 1 column

Size (%): 95 / Clopper-Pearson

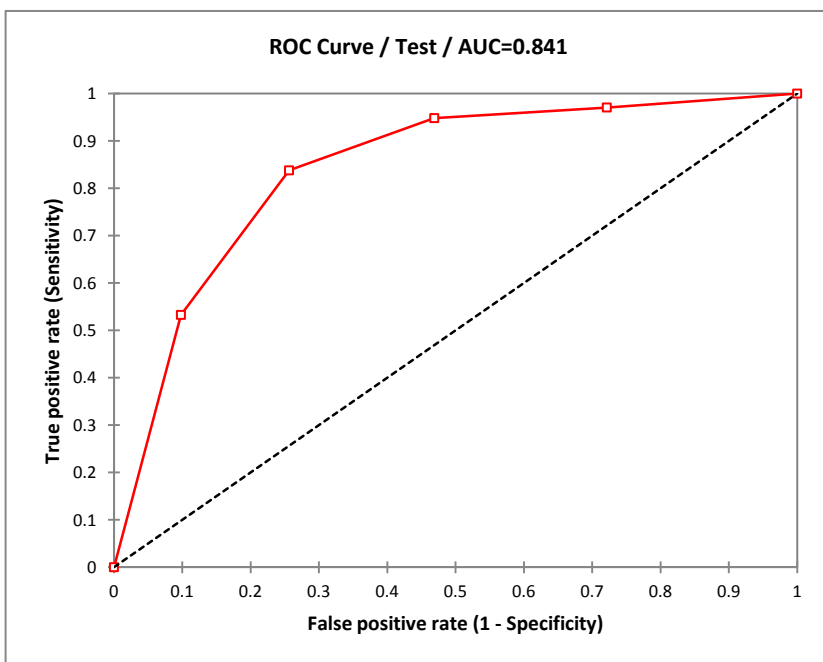
Area under the curve (Variance): Hanley & McNeil

Costs: TP = 1 / TN = 1 / FP = 1 / FN = 1

Summary statistics (Test):

Variable	Observation	with missing	without missing	Minimum	Maximum	Mean	std. deviation
Test	2457	0	2457	1.000	5.000	3.044	1.439

Event	Frequency	%
1	580	24%
2	244	10%
3	410	17%
4	576	23%
5	647	26%
Prevalence	0.236	24%

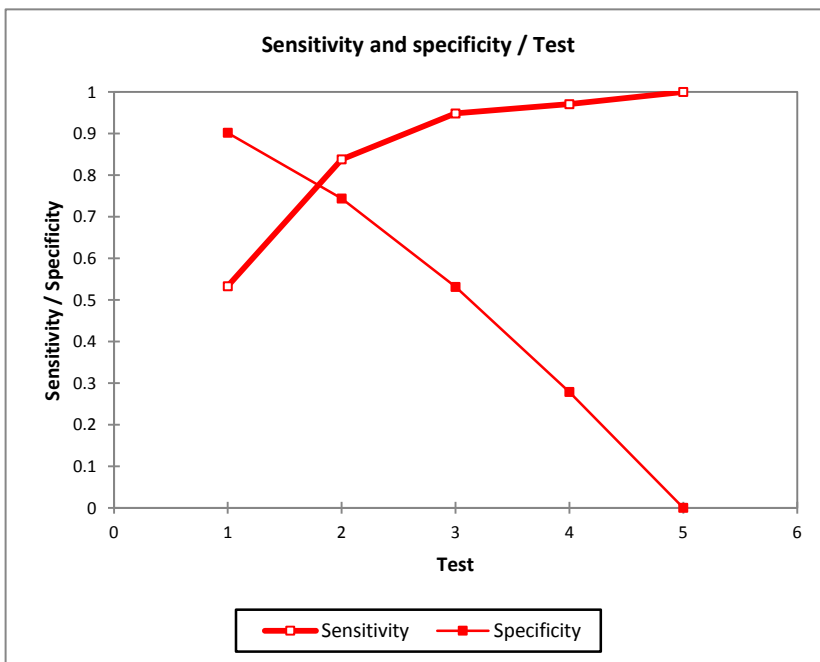
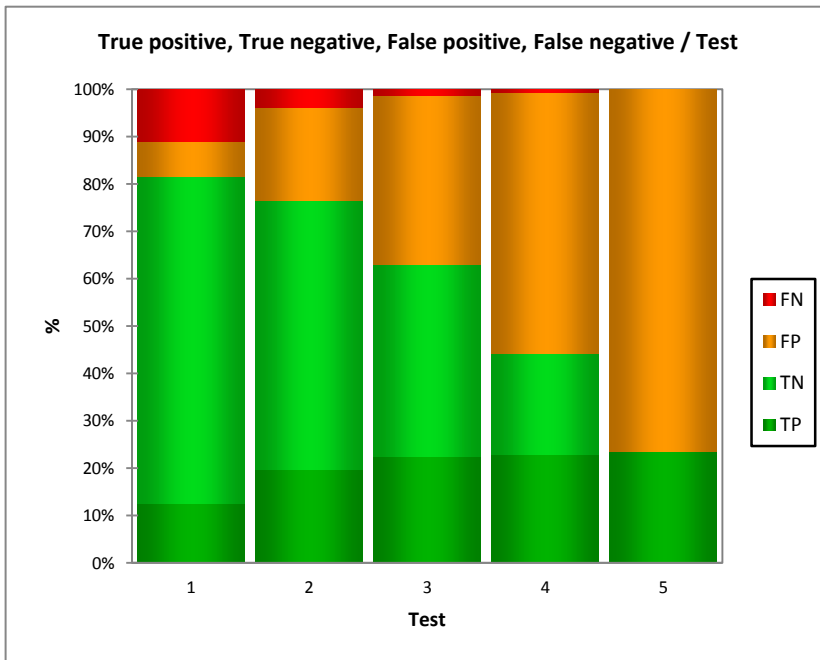


ROC analysis:

Test	Sensitivity	er bound (95%)	Specificity	er bound (95%)	Cost	PPV
------	-------------	----------------	-------------	----------------	------	-----

1.000	0.533	0.491	0.574	0.902	0.887	0.915	2457	0.627
2.000	0.838	0.805	0.866	0.744	0.723	0.763	2457	0.503
3.000	0.948	0.926	0.964	0.531	0.508	0.554	2457	0.385
4.000	0.971	0.953	0.982	0.279	0.259	0.300	2457	0.294
5.000	1.000	0.992	1.000	0.000	0.000	0.003	2457	0.236

Test is positive if Test <= threshold value



Area under the curve (AUC):

AUC	standard error	lower bound (95%)	upper bound (95%)
0.841	0.011	0.820	0.862

Comparison of the AUC to 0.5:

95% confidence interval on the difference between the AUC and 0.5 (Two-tailed test):

] 0.320, 0.362 [

Difference	0.341
z (Observed)	31.823
z (Critical value)	1.960
p-value (Two-tailed)	< 0.0001
alpha	0.05

Test interpretation:

H₀: The AUC is equal to 0.5.

H_a: The AUC is different from 0.5.

As the computed p-value is lower than the significance level $\alpha=0.05$, one should reject the null hypothesis H₀, and accept the alternative hypothesis H_a.

The risk to reject the null hypothesis H₀ while it is true is lower than 0.01%.

NPV	LR+	LR-	TP	TN	FP	FN	Sensitivity+Spec	Accuracy
-----	-----	-----	----	----	----	----	------------------	----------

0.862	5.435	0.518	309	1693	184	271	1.435	0.815
0.937	3.270	0.218	486	1396	481	94	1.582	0.766
0.971	2.023	0.097	550	997	880	30	1.479	0.630
0.969	1.346	0.105	563	523	1354	17	1.249	0.442
	1.000		580	0	1877	0	1.000	0.236

|