

## MODEL REPORT

### BRAND A:

*Selected Model:* **SVM Bayesian** (among Logit, Bernoulli Naive Bayes, SVM Sigmoid, SVM Polynomial, Random Forest, Artificial Neural Network).

*Selected Variables:* **66** (vrb\_254, vrb\_365, vrb\_13, vrb\_241, vrb\_235, vrb\_209, vrb\_399, vrb\_400, vrb\_022, vrb\_021, vrb\_008, vrb\_155, vrb\_018, vrb\_019, vrb\_266, vrb\_291, vrb\_388, vrb\_352, vrb\_310, vrb\_325, vrb\_425, vrb\_432, vrb\_163, vrb\_174, vrb\_002, vrb\_005, vrb\_169, vrb\_075, vrb\_451, vrb\_231, vrb\_301, vrb\_298, vrb\_273, vrb\_107, vrb\_104, vrb\_458, vrb\_298, vrb\_176, vrb\_95, vrb\_26, vrb\_307, vrb\_308, vrb\_290, vbr\_174, vbr\_115, vbr\_83, vbr\_374, vbr\_23, vbr\_433, vbr\_410, vbr\_333, vbr\_292, vbr\_143, vbr\_264, vbr\_359, vrb\_310, vrb\_111, vrb\_009, vrb\_114, vrb\_121, vrb\_421, vrb\_410, vrb\_495, vrb\_498, vrb\_064, vrb\_058).

*Dataset:* **450 instances** (80% training | 20% validation).

### TRAINING METRICS:

Accuracy: 0.8778

Precision: 0.8929

Recall: 0.8373

F: 0.8642

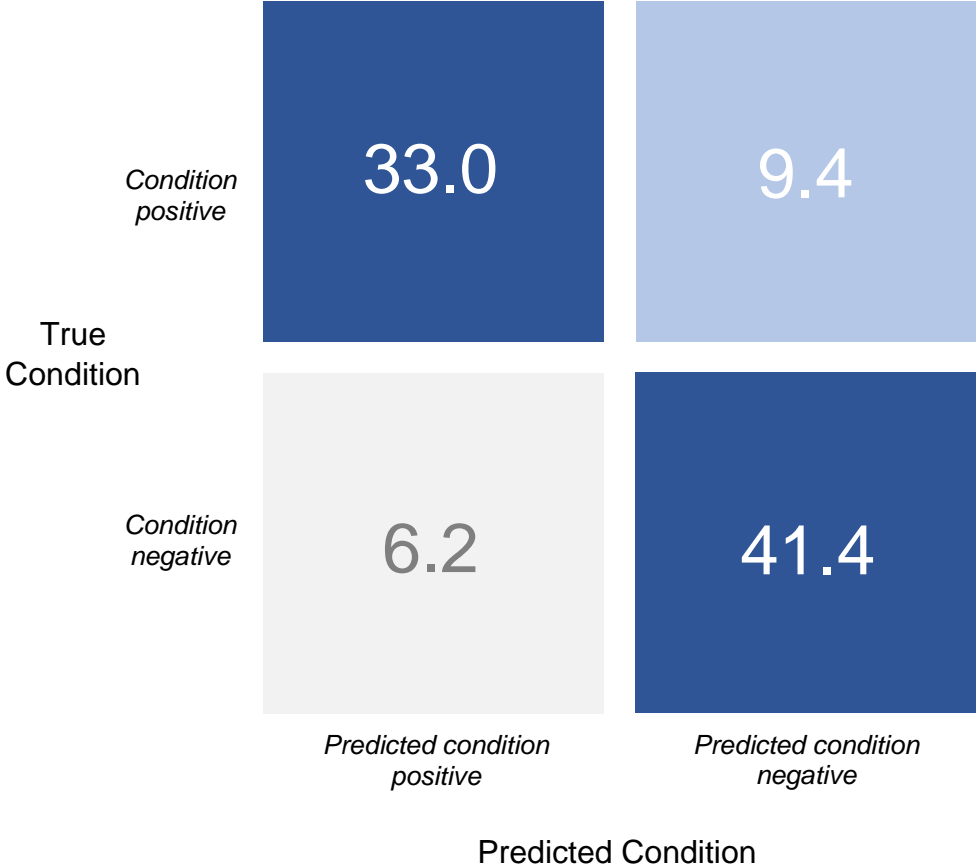
*Contingency Table:*

True Condition	Condition positive	140	27
	Condition negative	17	176
		Predicted condition positive	Predicted condition negative
		Predicted Condition	

**VALIDATION METRICS** (average of 30 iterations):

Accuracy: 0.8267  
Precision: 0.8418  
Recall: 0.7783  
F: 0.8088

*Contingency Table:*



**BRAND B:**

*Selected Model:* **SVM Sigmoid** (among Logit, Bernoulli Naive Bayes, SVM Bayesian, SVM Polynomial, Random Forest, Artificial Neural Network).

*Selected Variables:* **53** (vrb\_254, vrb\_365, vrb\_013, vrb\_241, vrb\_235, vrb\_209, vrb\_399, vrb\_400, vrb\_022, vrb\_021, vrb\_008, vrb\_155, vbr\_359, vrb\_310, vrb\_125, vrb\_026, vrb\_084, vrb\_055, vrb\_132, vrb\_200, vrb\_301, vrb\_163, vrb\_174, vrb\_002, vrb\_005, vrb\_169, vrb\_075, vrb\_451, vrb\_231, vrb\_301, vrb\_298, vrb\_273, vrb\_107, vrb\_104, vrb\_458, vrb\_298, vrb\_176, vrb\_095, vrb\_026, vrb\_307, vrb\_308, vrb\_290, vbr\_174, vbr\_115, vbr\_83, vbr\_374, vbr\_023, vbr\_433, vbr\_410, vbr\_333, vbr\_292, vbr\_143, vbr\_264).

*Dataset:* **400 instances** (80% training | 20% validation).

**TRAINING METRICS:**

Accuracy: 0.8300

Precision: 0.8789

Recall: 0.7877

F: 0.8309

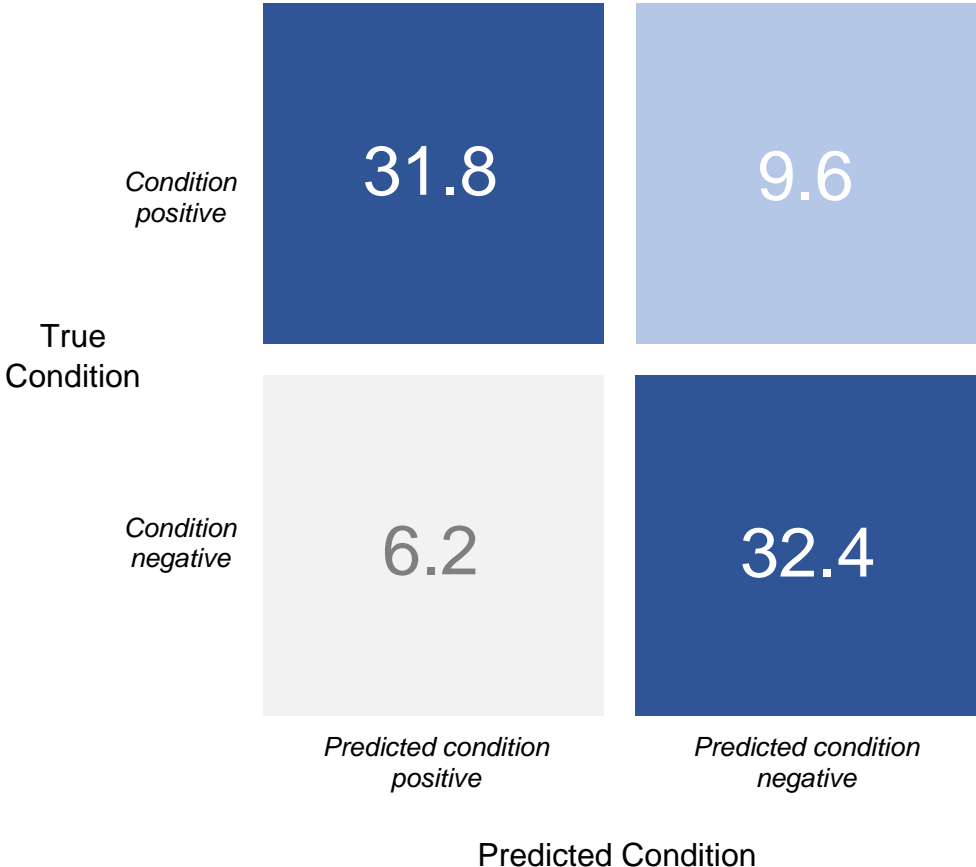
*Contingency Table:*



**VALIDATION METRICS** (average of 30 iterations):

Accuracy: 0.8025  
Precision: 0.8368  
Recall: 0.7681  
F: 0.8010

*Contingency Table:*



**BRAND C:**

*Selected Model:* **Logit** (among Logit, Bernoulli Naive Bayes, SVM Bayesian, SVM Sigmoid, SVM Polynomial, Random Forest).

*Selected Variables:* **75** (vrb\_95, vrb\_26, vrb\_307, vrb\_308, vrb\_290, vbr\_174, vbr\_115, vbr\_502, vbr\_510, vbr\_473, vbr\_451, vbr\_371, vbr\_325, vbr\_226, vbr\_222, vbr\_217, vbr\_198, vbr\_061, vbr\_070, vbr\_080, vbr\_118, vbr\_159, vbr\_83, vbr\_374, vbr\_23, vbr\_433, vbr\_410, vrb\_235, vrb\_209, vrb\_399, vrb\_400, vrb\_022, vrb\_021, vrb\_008, vrb\_155, vrb\_163, vrb\_174, vrb\_002, vrb\_005, vrb\_169, vrb\_075, vrb\_451, vrb\_231, vrb\_301, vrb\_298, vrb\_310, vbr\_010, vbr\_013, vbr\_055, vbr\_028, vbr\_210, vbr\_205, vbr\_251, vbr\_268, vbr\_307, vbr\_313, vbr\_478, vbr\_488, vrb\_254, vrb\_365, vrb\_13, vrb\_241, vbr\_160, vbr\_241, vbr\_243, vbr\_320, vbr\_382, vbr\_385, vbr\_520, vbr\_073, vbr\_333, vbr\_292, vbr\_143, vbr\_264, vbr\_359).

*Dataset:* **560 instances** (80% training | 20% validation).

**TRAINING METRICS:**

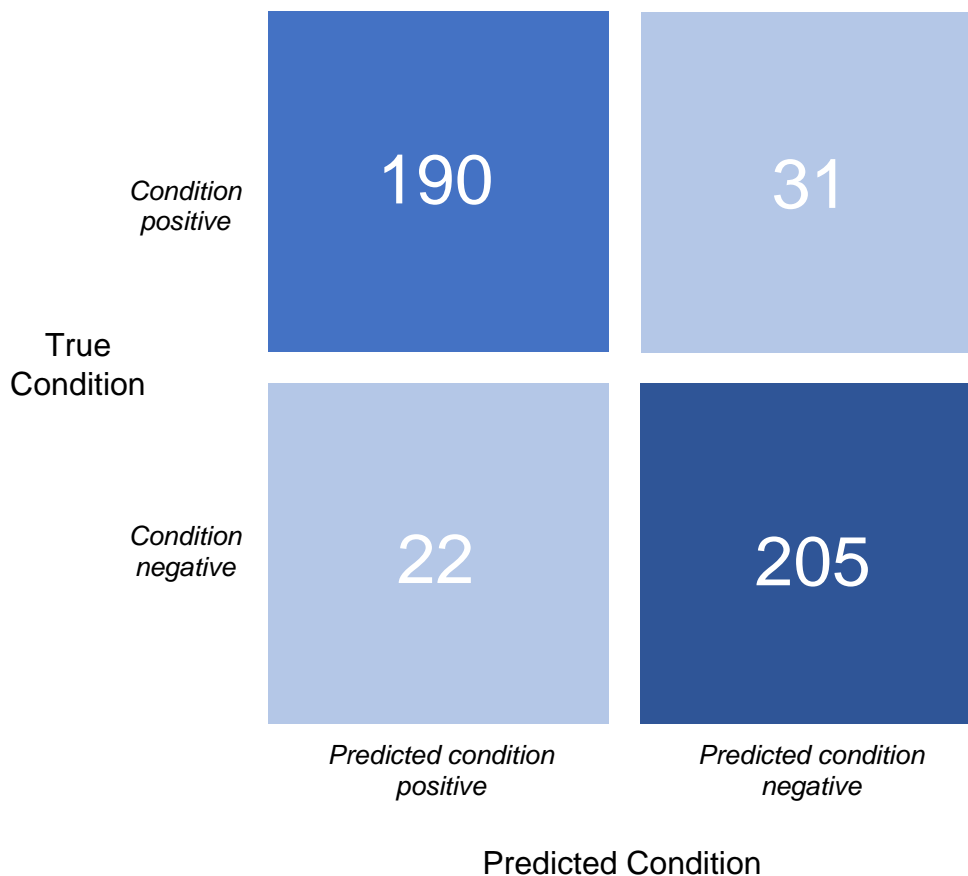
Accuracy: 0.8804

Precision: 0.8943

Recall: 0.8587

F: 0.8762

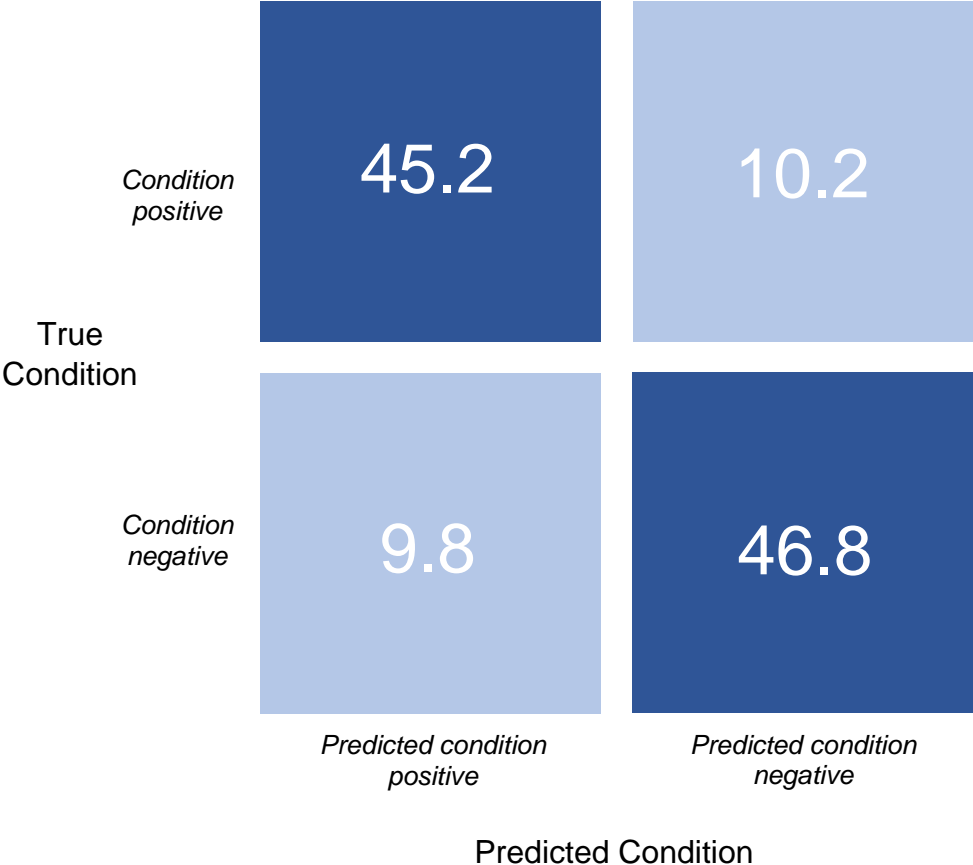
*Contingency Table:*



**VALIDATION METRICS** (average of 30 iterations):

Accuracy: 0.8214  
Precision: 0.8218  
Recall: 0.8159  
F: 0.8188

*Contingency Table:*



**BRAND D:**

*Selected Model:* **SVM Polynomial** (among Logit, Bernoulli Naive Bayes, SVM Bayesian, SVM Sigmoid, Random Forest, Artificial Neural Network).

*Selected Variables:* **50** (vbr\_222, vbr\_217, vbr\_118, vbr\_159, vbr\_83, vbr\_374, vbr\_23, vbr\_433, vbr\_410, vrb\_235, vrb\_209, vrb\_399, vrb\_400, vrb\_022, vrb\_021, vrb\_008, vbr\_521, vbr\_412, vbr\_305, vbr\_401, vbr\_032, vbr\_014, vbr\_147, vbr\_166, vbr\_066, vrb\_273, vrb\_107, vrb\_104, vrb\_458, vrb\_298, vrb\_176, vrb\_95, vrb\_26, vrb\_307, vrb\_308, vrb\_290, vrb\_310, vbr\_010, vbr\_013, vbr\_055, vbr\_028, vbr\_210, vbr\_205, vbr\_251, vbr\_268, vbr\_307, vbr\_313, vbr\_478, vbr\_488, vrb\_254).

*Dataset:* **290 instances** (80% training | 20% validation).

**TRAINING METRICS:**

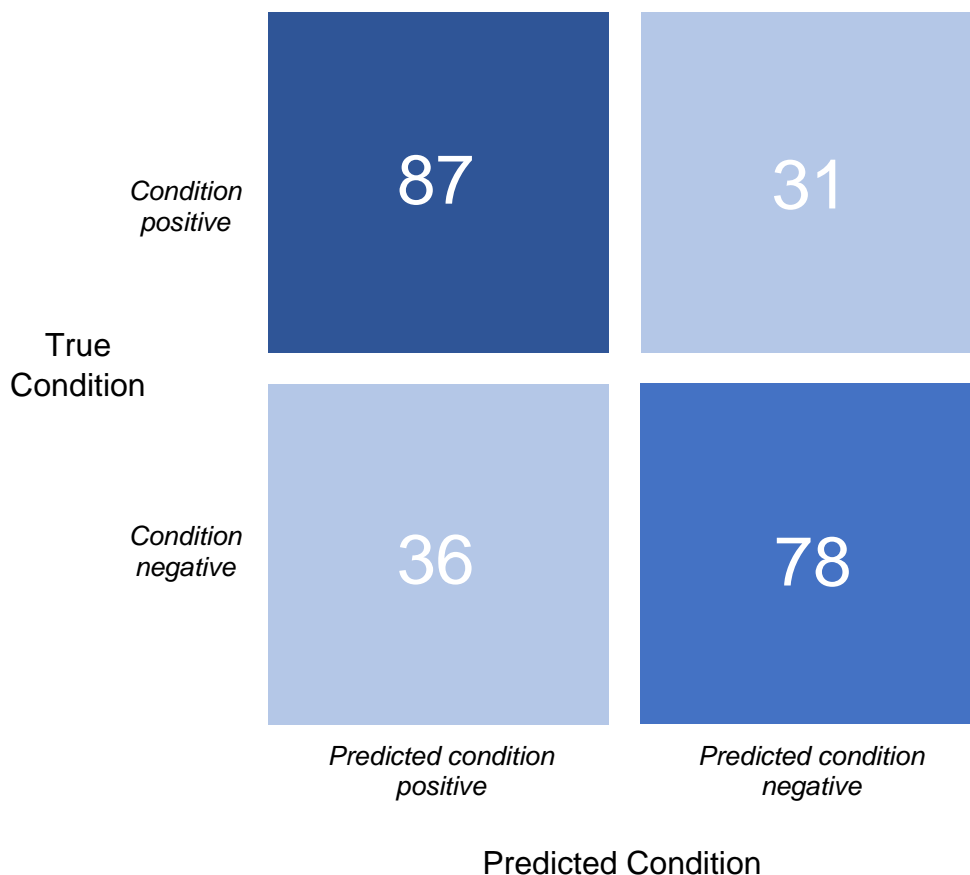
Accuracy: 0.7113

Precision: 0.7078

Recall: 0.7365

F: 0.7219

*Contingency Table:*



**VALIDATION METRICS** (average of 30 iterations):

Accuracy: 0.6379  
Precision: 0.6364  
Recall: 0.6667  
F: 0.6512

*Contingency Table:*

