Dataset, N = 20 {4Class, 5Item}	Actual Class (Condition Given)					P+N	Performance Measures
	P			**N**			
Predicted Class (Outcome) — **P**	TP Correct Decision Prob = 1 – α	2	1	FP Type I Errors Prob = α		3	PPV = TP/(TP+FP) = 2 / (2+1) **0.667**
Predicted Class (Outcome) — **N**	FN Type II Errors Prob = β	3	14	TN Correct Decision Prob = 1– β		17	NPV = TN/(TN+FN) = 3 / (3+14) **0.176**
Total in Dataset N+P	**5**			**15**		20	
Performance Measures	Sensitivity = TP/(TP+FN) = 2 / (2+3) **0.400**			Specificity = TN/(TN+FP) = 14 / (14+1) **0.933**		A=(TP+TN)/(TP+FP+TN+FN) = (2+14) / (2+1+3+14) **0.8**	

Evaluation Metric	Formula	Value	Meaning
Precision P (Positive Predictive Value)	TP / (TP+FP)	0.67	Proportion of the retrieved documents that are correct
Recal R (Sensitivity)	TP / (TP+FN)	0.40	Proportion of the positives that the model retrieved
Accuracy (Recognition Rate)	(TP+TN) / Total	0.80	Proportion of total number of predictions that were correct
Error Rate	1 – Accuracy	0.20	Error with respect to recognition rate
Fall-out	FP / (FP+TN)	0.07	Proportion of non-relevant retrieved of all non-relevant.
F-Measure (F1 or F-Score)	2*(P*R)/(P+R)	0.50	Weighted harmonic mean of precision and recall.
Specificity (TN Recognition Rate)	TN / (FN+TN)	0.82	Proportion of actual –ve cases which are correctly identified.
Negative Predictive Value	TN / (FP+TN)	0.93	Proportion of –ve cases that were correctly identified.

Inference	Example	Meaning
Type I Error (α) or Level of Statistical Significance	For eg: α = 0.05; then the researcher has set 5% as the maximum chance of incorrectly rejecting the Ho.	Prob. of rejecting the Ho when it is actually true. (Falsely rejecting a Ho)
Type II Error (β)	For eg: β is set at 0.10, then the investigator has decided willing to accept a 10% chance of missing an association of a given effect size.	Prob. of failing to reject the Ho when it is actually false. (Falsely accepting a Ho)
Power(1 - β)	If β is set at 0.10, then it represents a power of 0.90, i.e., a 90% chance of finding an association of that size.	Prob. of observing an effect in the sample (if any), of a specified effect size or greater exists in the population.
P Value	Ho is rejected in favor of the Ha if P value < α, the predetermined level of statistical significance.	Prob. of obtaining the study results by chance if the Ho is true.