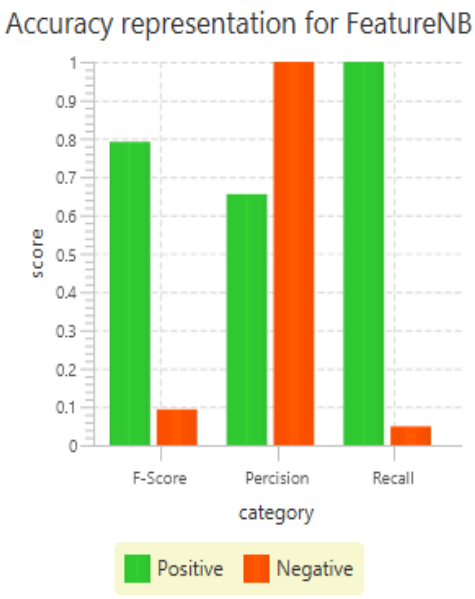
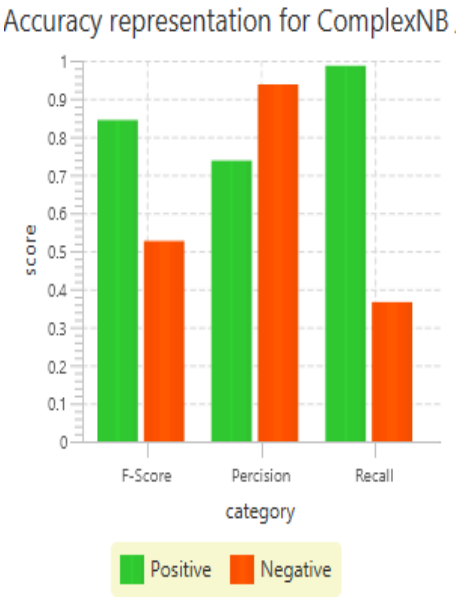
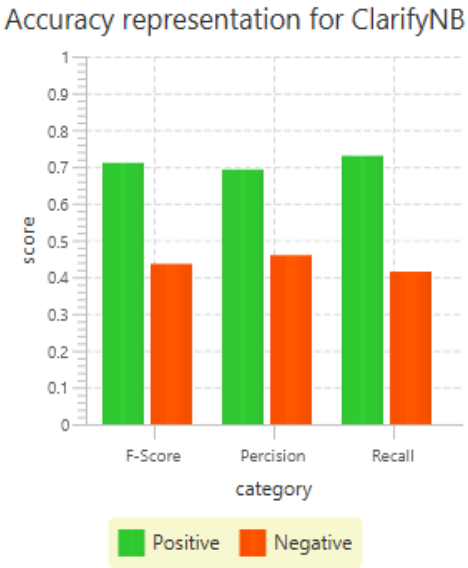
Another approach

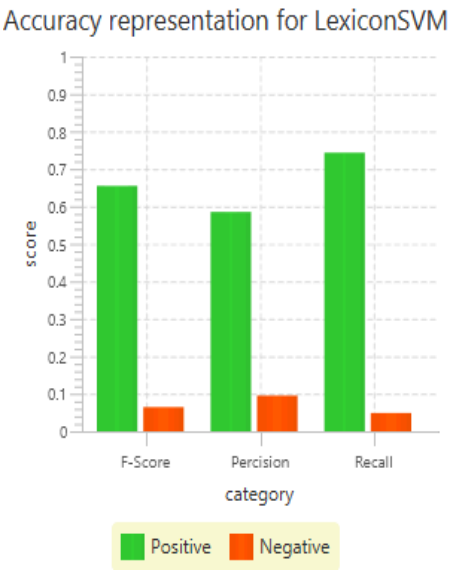
After applying our first methodology, we carry another one in order to see a different result and to have a comparison with two different methodology.

First, in our features we followed *Cross-Domain Polarity Classification on Twitter* [1] to specify the polarity for tweets, we created four different tweet representations and trained one classifier on each one of them, trying to find the parameters that achieve the highest accuracy (**Text-Based Representation, Feature-Based Representation, Lexicon-Based Representation, Combined Representation**), We have separated our classifiers in two categories, based on their domain-(in)dependent nature: the hybrid classifier (HC) and the lexicon-based one (LC), The following is our result after training the classifiers in 40,000 tweets:

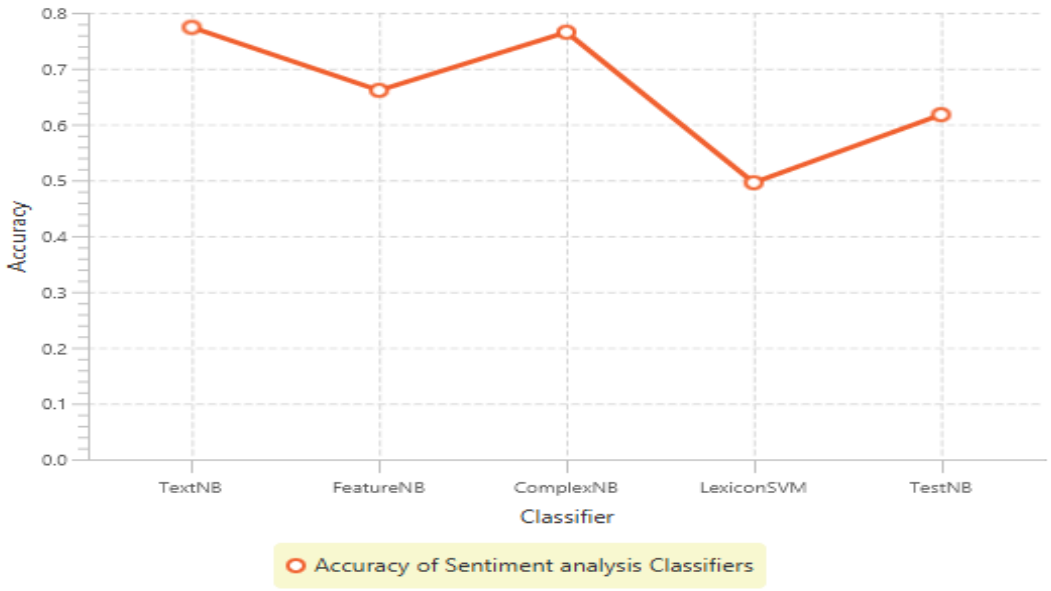








And, the following graph represent the effect for each tweet representation classifiers in the accuracy of sentiment analysis.



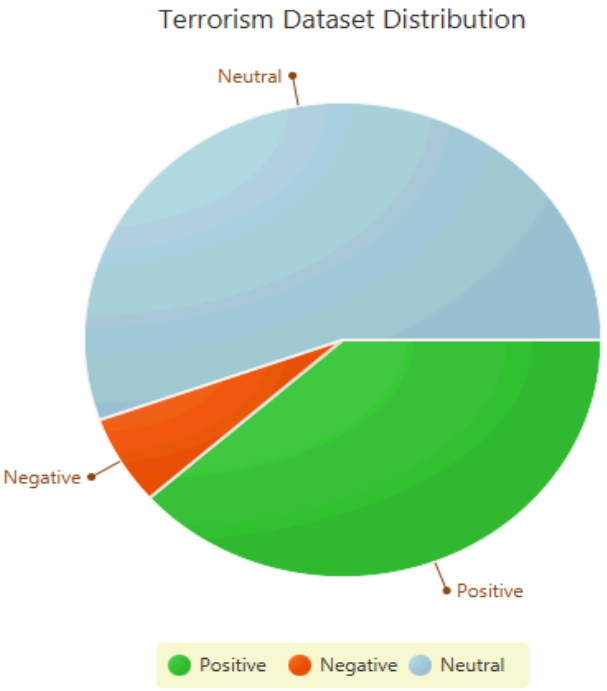
The main advantage here is the combination of supervised and unsupervised learning applied on the tweet and the predictions HC and LC on a test set are combined and the documents for which theyagree on are automatically assigned the corresponding label, whereas the remaining documents are passed to a classifier which trained on a general tweets (CNB).

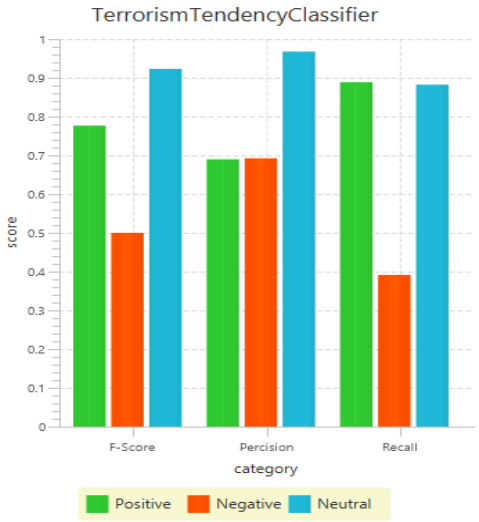
Accuracies of Polarity Classifiers

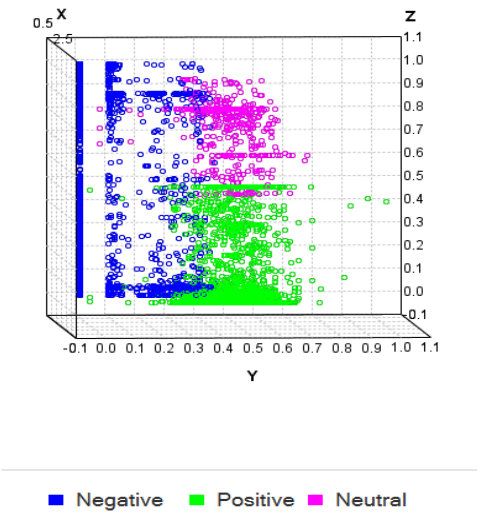
Method	TBR	FBR	CR	LBR	HC	LC	Agreed	Disgaree
Acc.(%)	0.77%	0.66%	0.77%	0.5%	0.77%	0.5%	0.8%	0.2%

Method	HC_LC	CNB	Total
Acc.(%)	0.73%	0.74%	0.73%

Second, the following graphs represent the accuracy that we have reached after training SVM (Tendency Classifier) on 70,000 tweets and testing it on 102 tweets which contains both of positive, negative and neutral tweets







- Testing classifier on 102 tweets which contains both of positive, negative and neutral

Confusion matrix

TerrorismTendencyClassifier

Actual \ Predicted	Negative	Positive	Neutral	Total
Negative	9.0	14.0	0.0	23
Positive	4.0	40.0	1.0	45
Neutral	0.0	4.0	30.0	34

Testing_set : **102** Acheived_accuracy : **77 %**