**Association rules exploitation**

**“emotional\_intensity”**



Figure 1: classification report of "emotional\_intensity" attribute by exploiting association rules

With a minimum confidence threshold of 70% and taking the rule with the highest confidence for each *emotional\_intensity* class we obtain a prediction model with 38% accuracy, which is a much lower value. This is due to the lower confidence of the *strong* class, which has only one rule with greater than 70% confidence, compared to the *normal* class which has four rules with greater than 70% confidence.

Despite this, the values of precision, recall and f1-score are higher in the *strong* class than in the *normal* class and this could be caused by an higher support and confidence values in *strong*, which has in its only rule taken into account a percentage respectively of the 20.23% and the 81%, compared to the *normal* rules in which the most common reaches 17.85% with a confidence of 71%.

**“emotion\_positivity”**

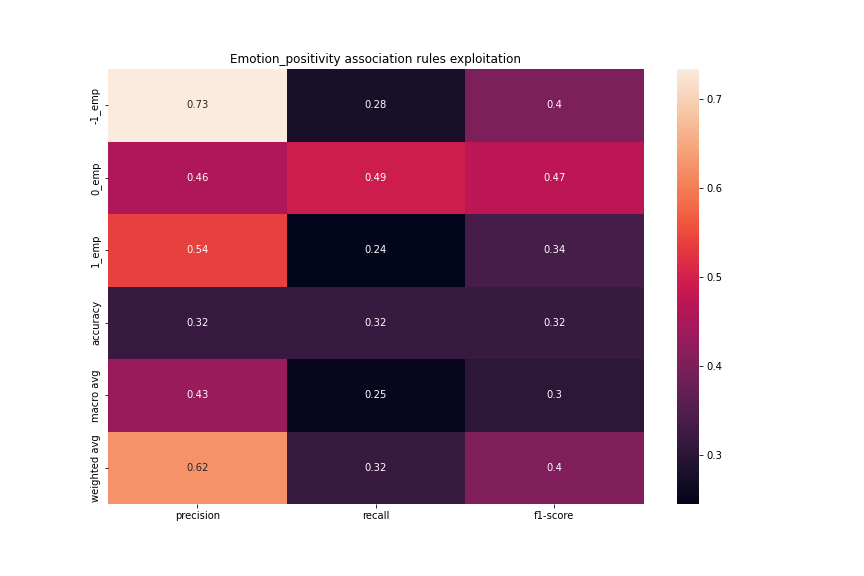


Figure 2: classification report of "emotion\_positivity" attribute by exploiting association rules

Using one rule for each class of *emotion\_positivity* we obtain a model with an accuracy of 32%, a very low value but influenced by the minimum confidence threshold of 30% because only the *-1\_*emp (negative emotions) class has at least one rule that reaches the 70% of confidence. The other two classes have a lower confidence rule, which at most reach 36% and 46%.

**“emotion”**

Immagine che contiene testo, monitor, interni, argento

Descrizione generata automaticamente

Figure 3: classification report of "emotion" attribute by exploiting association rules

This model turned out to be problematic to build, as some classes occur much less times than others, as can also be understood from the results. However we still wanted to try to make a prediction and, although the minimum confidence value is very low, 10%, the total accuracy is much higher, 37%.

Net of a couple of interesting values, such as the recall of the *calm* and *happy* classes, it is obvious that the above model is neither reliable nor informative.