# Decision Trees

Node purity – a small value indicates that a node contains predominantly observations from a single class.

Error classification rate:

Gini index:

A small gini index (either is large or small) indicates that the node is pure, it contains a lot of observations from the same class.

Entropy:

Since , it follows that entropy will take on a value near zero if the are all near zero.

Both gini index and entropy will take on a small value if the mth node is pure.

Here is the proportion of training observations in the *m*th region that are from the *k*th class.

